STATE NORMAL COLLEGE
YPSILANTI, MICH.

No. 194 *JUNE*, 1939 VOL. XLIX

THE

ECONOMIC JOURNAL

THE QUARTERLY JOURNAL OF

The Royal Economic Society

EDITED BY

J. M. KEYNES ASSISTED BY E. A. G. ROBINSON

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London

MACMILLAN AND CO. LIMITED

NEW YORK: THE MACMILLAN COMPANY

Price Six Shillings net

All communications respecting Advertisements to be sent to

THE SECRETARY, ROYAL ECONOMIC SOCIETY, 4 Portugal Street, London, W.C.2.

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THE ECONOMIC JOURNAL

JUNE, 1939

PRESIDENTIAL ADDRESS

THIS meeting is not, I think, a fit occasion for a technical discussion, rather for something garrulous and discursive. It has occurred to me that, as one whose contact with economics goes back for forty years and his occupancy of the Cambridge Chair for thirty, I might try to entertain you for a short time with reminiscences and comparisons between our present state and what it was in days before the Flood.

But there is one other thing I must do. Since the last presidential address was given here, we have lost by death two ex-Presidents—Professor Foxwell and Professor Cannan—both full of years, and both in their several ways men of high distinction. It is not for me to speak now either of their personality or of their work. That has been done by others, far better than I could do it, in the pages of the ECONOMIC JOURNAL. But you would wish, I am sure, that, as your representative for the moment, I should at least name their names.

When I was an undergraduate, forty years ago, economic thought in this country was carried on in a setting very different from what rules now. I will begin with two instances, one material and one social, that happen to have impressed themselves on my mind. The first has to do with the machinery of transport, the second with the status of women.

What makes me think especially of transport is this. At the beginning of my second year of Cambridge, in 1896, I went with some friends for a bicycle tour in Brittany. There we saw our first motor-car. It was a strange contraption occupied by two men. We engaged ourselves to race that car. On declines it outpaced us, but on ascents we were its masters. With frequent passings and re-passings the *entente cordiale* was kept alive! To many of you a motorless world, or a world occupied by motor-cars of that description, must seem quite antediluvian. Then, I think it was in 1909, Blériot flew the Channel; and an engineering friend told me that, even so, aviation could, in the nature of things, never be more than a stunt. How terribly he was mistaken!

That development in means of transport has already transformed, before long it may destroy, civilisation!

The change in the status of women, which I mentioned just now, has to do chiefly with women among the better-to-do classes. A quarter of a century ago the Tutor of King's College, Cambridge, a man of unblemished repute, some sixty years of age, had a niece at Newnham. This niece was not allowed to take tea with him in his rooms except in the presence of a chaperon! When I started lecturing, there were a few students from the Women's Colleges attending the course. They were accompanied for the first half of my first term by a formidable and sardonic matron, who ostentatiously read a book. After a month or so, whether on account of the perfect propriety or of the intolerable boredom of my discourses, she ceased to appear. I had been vetted and found safe; henceforward the young things were allowed to chaperon one another! Again, thirty years ago, soon after I had become Professor, I was called upon by friends to assist in the instruction of their sisters and others in the art of rock-climbing. Now, to climb rocks in a long skirt is an operation uncomfortable for oneself and dangerous, on account of the dislodgment of stones, for anybody below. But, in those days, for ladies to appear in civilised regions in anything other than long skirts was unheard of. Consequently, it was necessary for them to start from the valley robed in these garments, beneath which were concealed natty knickerbockers. When the valley was 1000 or 2000 feet below, the outer vestments were discarded, placed in the sacks of the accompanying males, and dutifully carried by them. Sometimes there were adventures. On one occasion a lady was to be escorted up a rather steep and smooth slab. My friend went first to provide traction. I was the *vis a tergo*. The lady became spreadeagled on the slab; and her feet suddenly began to rotate with a remarkable and by me unanticipated velocity. I claim to be the only occupant of a professorial chair who has ever been kicked on the head by any denizen of a women's college. When the work of the day was done, the long skirts were resumed by their owners, sometimes, but not always, with expressions of gratitude to the over-burdened porters, and the valley was re-entered in perfect decorum. I need not contrast for you that state of society with that of the present day. Members of the fair sex, clothed in garments which no man dare attempt to describe, make difficult expeditions on English, and even on Swiss, mountains not merely "sans guides," but, as some of them proudly proclaim, actually "sans hommes."

These two differences that I have illustrated are not, I need hardly say, the most important of the differences between the setting in which present-day economists work and that which surrounded us thirty or forty years ago. What is the most important difference? There need be little doubt about the answer. Economists then had grown up in, and their whole experience was confined to, a world which, as regards politics and economics alike, was reasonably stable. There were, of course, local political disturbances. There were the ups and downs of the so-called trade cycle, fairly moderate in amplitude. There were also large basic changes going on, due to the impact of American and, later, Antipodean agriculture upon the structure of our economy. But the basic changes were gradual and slow-working. There were no catastrophes. How different is the experience of economists to-day! The War, with its aftermath of ruin; the period of unbalanced Budgets and astronomical inflations; the slow readjustment; the terrible relapse of the great depression and the political tensions that accompanied it! This fundamental difference of experience is, I think, largely accountable for the difference in the way in which the old generation of economists and the new approach their problems. Inevitably now the short run presents itself with far greater urgency relatively to the long run than it did then. The economists from, say, 1890 to 1910 did not, of course, ignore problems of transition or the great evils of fluctuating employment. But, relatively to the underlying forces by which production and distribution are governed, these things took second place. For the same reason, I think, the influences that monetary reactions exert upon what one may loosely call the real situation were subordinated. It was natural for Marshall, as things then were, to attack the problem of foreign trade by way of "bales of goods," and to bring in its monetary aspects at a later stage. For, to put the point over-sharply, the part played by money is dominant in the short run, but secondary for long-run problems. In a period when our minds are attuned to sudden and violent changes, a different viewpoint is natural. In calm weather it is proper to reckon the course of a ship without much regard for the waves. But in a storm the waves may be everything. The problems of transition are the urgent problems. For, if they are not solved, what happens is not transition, but catastrophe; the long run never comes. I will not labour further what is obvious. The moral is clear. If the difference in emphasis and outlook between post-war and pre-war economists is a natural, indeed an inevitable, consequence of their different environments,

neither outlook can properly be called more right than the other. The two are not competitive: they are complementary.

So much for the contrasted settings of surrounding fact in which economists lived before history began and in which they live to-day. What of the professional setting? There is one very striking difference between then and now: in the number of persons in this country who are engaged professionally, whether as writers, teachers or junior students, with the subject of economics. Marshall, Edgeworth, Bastable, Nicholson, Cannan, Foxwell, Mr. and Mrs. Sidney Webb; the undergraduate of my day would have been hard put to it to add to those names. When Joseph Chamberlain raised the issue of Protection *versus* Free Trade, Edgeworth and others prepared a letter condemning certain popular protectionist arguments. This letter was signed by fourteen economists. Newspapers and politicians spoke of them, with reverence or with contumely, according to taste, as "the fourteen professors," though in truth the majority of the signatories were not professors, but junior lecturers like myself. With some four or five exceptions, notably Foxwell, this list included all the economists with professional appointments in the United Kingdom. Last year a letter was issued by a group of Oxford economists on a matter of current policy. In that list, emanating from one University only, there were substantially more names. There have been similar great advances in the number of young men taking economics as a part of their University course. When I was an undergraduate there was in the History Tripos one paper, out of nine, on Political Economy. The subject could only be studied seriously as an optional special subject in Part II of the Moral Sciences Tripos, for which there were very few candidates. Now we have a full-blown Tripos in Economics and Politics with two Parts, and from 150 to 200 students sitting for examination in one Part or the other every year. This increase in number is not, of course, special to Cambridge: it has taken place all over the country.

But there is a thing to be added to this. The great increase in the number of persons professionally concerned with economics has not—such, at least, is my strong impression—been distributed evenly over all grades of ability. Much the largest proportion, not merely the largest number, of new recruits among undergraduate students has consisted of second- and third-class men; while among men of really first-rate ability—I don't mean just people who have obtained First-Class degrees, the standard for which, after all, is not very high—I much doubt whether in

absolute numbers there has been any increase at all. In the later nineties of last century Marshall's pupils included Flux, Bowley, Sanger, Pethick Lawrence, Chapman and Clapham. We certainly have not, since the development of our Tripos, turned out men of that calibre at any greater rate. Remember again the list of eight names that I gave you as the leading economists of my undergraduate days—Marshall, Edgeworth, Bastable, Nicholson, Cannan, Foxwell and Mr. and Mrs. Sidney Webb. Out of our enormously greater number of professors and other teachers, could we make an appreciably longer list without greatly dropping the standard? No doubt in our little world, as in the larger one, the War swept away a number of men who should have been leaders to-day. No doubt, too, one who was a pupil among the giants of old, and is a colleague among those who, it may be, are giants to-day, is not well placed to make comparisons. I only offer this impression of mine for your consideration.

Moreover, even if I am right, there is a consolatory thought. Economics and History are alike in this: in both there is wide scope for useful work by men and women who are not of the first intellectual rank. In subjects such as metaphysics and mathematical logic—so, at least, it seems to an outsider—workers of good, but not supreme, ability cannot hope to make serious contributions or to be more than routine teachers. But in economics, though for *great* steps forward you need equally, perhaps, the wide sweep of an intellectual giant, there are many little steps that ordinary men can make; many bits of unmapped territory to explore; many gaps in our knowledge and ordering of facts that can and should be filled. For "this low man slowly adding one to one" there is in our subject not only a place, but a very real need.

There is one other contrast which I would like to set before you. Forty years ago, indeed down to the catastrophe of the War, economic thought in this country was dominated to a quite extraordinary degree by one man—Marshall. He was our leader, practically unchallenged. Edgeworth from Oxford explicitly acclaimed him as such. Not only for his former pupils in places of authority, but for the general body of economists in England, he was "the master." For junior students the effect of this moral dictatorship was almost wholly good. The broader problems of economics being safe in Marshall's keeping, we were content in our early theses to attack narrow issues reasonably within our compass. We did not, as so many beginners, with lamentable results, do now, attempt at our début to rebuild economic science

from basement to roof. Our limited work may not have had much value for the world, but it had great value for us. It gave us a training which from tasks beyond our power we could not have obtained. Against these good effects of the Marshallian dictatorship, there must, however, be set the bad. The activity of others besides novices was limited by reverence for the master. What was the use, for example, of anyone working at Money, when we knew that in his head, if not in his drawer, there was an analysis enormously superior to anything that we could hope to accomplish? This attitude cannot but have checked enterprise and initiative. The mountaineer, who year after year has followed a supreme guide, risks becoming imbued with the spirit of a follower, unapt himself to lead.

However that may be, the situation to-day has nothing in the least resembling the Marshallian rule. There are, indeed, writers with enthusiastic disciples; but they have no less enthusiastic critics. While Marshall was a centre of unity, of acquiescence, of quiescence, they are rather centres of disturbance. To the novice this is a sore trial. He is plunged into controversy on fundamental matters too early; before he has learnt to swim, he is tossed to a turbulent sea. But for those more mature, and for economics itself, the clash of conflicting opinion, breaking down dogmatic slumber, may evoke life. Out of the turmoil something new and valuable may grow. A period of confusion; then a second Marshall and a new synthesis—a synthesis, if one may dare a prophecy, much nearer to that of the first Marshall than many now suppose. Then a second period of confusion; a debunking of the second Marshall; and so on in a progressive, if irregular, advance towards clearer understanding.

So let us suppose. But, if so, to what end? The ambition, I have claimed elsewhere, of most economists is to help in some degree, directly or indirectly, towards social betterment. Our study, we should like to think, of the principles of interaction among economic events provides for statesmen data, upon which, along with data of other kinds, they, philosopher kings, build up policies directed to the common good. How different from this dream is the actuality! How very unlike philosopher kings actual politicians are! To how small an extent the conduct of affairs is the result of thought! Was it as a result of thought that the century-old policy of Free Trade was abandoned by this country in 1931? A political party was swept into power on a wave of panic to defend the gold standard. A new and splendid argument for Protection had been found: it was a way to save the

pound. Immediately the patient died. Undeterred, the doctors —was there not a doctors' mandate?—administered their remedy to the corpse! I am not arguing that the return to Protection was unwise; I am asserting that, whether wise or not, it was not the result of thought; rather of accident, of the blind pressure of events, blended, the uncharitable might add, with a flavour of political sharp practice. Thought indeed! Why, in the Ottawa Agreement there was formally embodied the "principle" that import duties into the Dominions should be so arranged as to equalise domestic and foreign costs—a "principle" which, I suppose, no economist in the world regards as other than nonsensical. In view of these things, the hope that an advance in economic knowledge will appreciably affect actual happenings is, I fear, a slender one. It is not likely that there will be a market for our produce. None the less, by a sort of reflex activity, we cultivate our garden. For we also follow, not thought, but an impulse—the impulse to inquire—which, futile though it may prove, is at least not ignoble.

A. C. Pigou

THE RÔLE OF INTEREST RATES AND BANK CREDIT IN THE ECONOMIES OF THE BRITISH DOMINIONS

I. Introduction

To what extent may general changes in interest rates and in the credit policies of banks influence the rate of investment and the level of prosperity? This is a question to which many writers have recently applied themselves and upon which an increasing measure of agreement seems to be emerging. But most of their work relates to the economies of mature capitalist countries. It is the object of this article to apply the question to young or fairly young countries where agriculture and mining still occupy dominant positions. The treatment is specifically confined to four British Dominions—Canada, Australia, New Zealand and South Africa—which have reached a fairly similar stage of economic maturity and which possess very similar banking systems; but much of the material may be applied to other countries in like circumstances. Need for this analysis arises out of the recent establishment and extensions of central banking in these Dominions; for the appropriate regulation of interest rates and the volume of bank reserves is everywhere considered to be amongst the cardinal functions of a central bank.[1]

II. Short-Term Rates and Bank Loans

The Traditional Stability of Short-Term Rates.—In the Dominions practically all short-term lending is done by the banks and other large financial institutions (apart from a mass of personal transactions and shopkeepers' credit about which relatively little is known); and such lending is therefore largely subject to quoted and customer rates. It has been something of a tradition, even a matter of pride, that the leading institutions should keep their rates steady in the face of changing circumstances :—

> "Canada is a young country not yet old enough to have a money market of its own such as operates in London and

[1] The material which follows is part of a larger work soon to be published upon the history and problems of central banking in the Dominions. It will be possible there to consider the relationship of interest rates to international capital movements and balances of payments; but here only the internal rôle of rates can be discussed.

> New York. It has been the aim of the Chartered Banks to maintain rates of interest at a steady level. . . . This policy of the Canadian Banks has had a very steadying influence on the business community and borrowers were enabled to make their commitments without fear of their interest costs being subject to violent fluctuations in periods of depression or when wars or rumours of wars convulsed the great money markets of the world. It has been an important factor in creating and maintaining the feeling of confidence in their banks by the public generally." [1]

This tradition of stability is being gradually broken down by the activities of certain leaders inside the banking community,[2] and, from the outside, by the intermittent pressure of governments and public opinion. Nevertheless, a general movement of quoted rates is still a contentious matter. It is clear, however, that the banks in South Africa are becoming accustomed to moving their rates in harmony with the discount rates of the Reserve Bank. In Australia there is certainly less harmony in the adjustment of rates; but movements have occurred with sufficient frequency in the past ten years to suggest that the traditional stability is a lost cause. In New Zealand a number of interest rates, such as those offered by the post office and various other depositaries, have recently been brought under the direct control of the Government; and the banks could hardly afford, even when they dared, to depart from the official lead. Their lending rates naturally conform to movements in their deposit rates. It does not seem likely that the Government will wish to change the level of rates very frequently; and rates have not yet (1938) changed in an upward direction. In Canada the opponents of changes clung to their position with greater unanimity and tenacity than elsewhere; and relatively few concessions were made before 1933. Thereafter the downward movement spread over two or three years. A plethora of cash reserves, and a failure of the demand for bank loans to revive substantially after the depression, have since combined with political pressure to keep the rates down. It is probably true to say that the level of bank rates is more rigid, less easily changed in conformity with central banking and governmental policy, in Canada than in any other Dominion.

[1] Evidence given before the Royal Commission on Banking and Currency in Canada, 1933 (mimeographed), p. 3281. For some arguments against this tradition of stability see C. G. W. Schumann, *Structural Changes and Business Cycles in South Africa*, P. S. King, London, 1938, pp. 282–3.

[2] For example, see the evidence of A. C. Davidson, General Manager of the Bank of New South Wales, before the Royal Commission on Monetary and Banking Systems in Australia in 1936, published by the Bank, pp. 24–5.

At present (1938) the Canadian bankers would be happier if the level of rates rose. As the quotation above indicated, they desire stable rates; but only if the rates are high enough to be remunerative.[1]

Bank Loans and Lending Rates.—The rates which banks charge for short-term loans are not generally considered to exert much influence upon the policies of business men, because the cost of bank loans is usually an inappreciable part of their total costs. In so far as this is so, periodic changes of these rates will not affect businesses in particular or the state of business in general. If this were the whole truth, we might immediately terminate our discussion of bank lending rates. Actually, however, when banks do alter their rates it usually reflects a change of attitude towards the extension of loans; and such changes of attitude may be of considerable importance. To some businesses, of course, a change of rates might by itself be a matter of real concern, for instance to the businesses of professional dealers and speculators in commodities or securities who usually obtain most of their funds from banks; but even here the *attitude* of the banks is likely to be of greater influence on the volume of borrowings than the *rates* which they charge. Accordingly we shall focus our attention not upon rates, but rather upon the effects of the changing attitudes and policies of commercial banks, assuming that at various times and in various circumstances banks may alter their rates in order to make their general policies somewhat more effective.

Before leaving the subject of rates and embarking upon a general discussion of credit policies it is worth while to remark upon the political significance of rate movements. In many districts, and particularly in rural sections in which the banks' charges affect a relatively impecunious group, a rise in rates is sometimes taken as evidence of the grasp of the financial interests. On the other hand, a fall in rates, particularly if it is the result of political pressure, is regarded as a victory for the people. It may well be that, if we dissociate bank rates from general credit policy, the political significance of rates is greater than their economic significance.

[1] Of course, strictly speaking, banks make their income out of the *spread* between the rates which they offer to depositors and those which they charge to borrowers. But bankers regard a high level of rates with favour partly because when the level is high their spread is usually wide, partly because leading bankers are usually creditors and leaders and followers alike are prone to share the creditor's partiality to high rates, and partly because some of them have persuaded themselves that low rates actually discourage business.

If, as suggested above, most businesses normally depend but little upon bank loans, it might seem to follow that changes in the credit policies of banks, like changes in their rates, would be of little general importance. In fact, however, many if not most businesses must depend upon the banks, either directly or through some intermediary, at some stage and often at a crucial stage in their careers. This is true of many concerns in their early days; and others are later reduced to dependency by bad luck or bad management. The policy of the banks may be very important and perhaps decisive in the initiation of new enterprises and in the rescue or expansion of old ones. If their attitude is relatively harsh towards those dependent upon them, if their credit policy is restrictive and their rates are high, they will exercise a generally repressive effect upon business: contrariwise, they may be encouraging. Agricultural areas as well as industrial may feel the direct effects of the credit policies of the banks. This may be less so in Canada, where the banks appear less willing to finance agriculture, than it is in the other Dominions. In all of them, however, the policies of the banks may be especially important when a district is changing or diversifying its agricultural interests, when mixed farming is entering a wheat area, or when great sheep-stations are being broken up into smaller units for the production of wheat or dairy products. When a new area is being opened up for the first time it may be difficult for banks to find a sound basis for the extension of credit, and bank policy may play a minor rôle; but when an area is already settled and its possibilities are fairly well appreciated, the policy of the banks may be most important in facilitating or retarding alterations in the nature of its stock and capital equipment.

In the long run, if bankers seem to be unduly rigorous in their demands, or if the rates they charge on ordinary or emergency loans seem exorbitant, they may lose business. Clients who have experienced a bitter period of dependency, and others who fear a similar experience, may take special precautions to keep independent. It is said that this was one reason for the failure of Canadian bank loans to rise with the business recovery which started in 1933.

Some theorists have found in periodic alterations of the volume of bank loans or in consequent alterations of the volume of bank deposits the chief cause of cyclical fluctuations of business. Put in this way the claim seems exaggerated: indeed, if one had to choose whether the credit policies of commercial banks were the result or the cause of business fluctuations, it would probably

be preferable to consider them the result.[1] In countries such as the Dominions, where prosperity is so dependent upon foreign markets, it would be specially indefensible to suggest that the movement of bank loans or deposits was a dominant causal factor in the business cycle. Practically all bankers feel that their attitudes and policies are altered simply as a result of alterations in the general conditions of business and in the specific affairs of their customers. Nevertheless credit policy may be an important factor aggravating or mitigating the cycle. An extension of bank loans, it must be recalled, may be a decisive factor in allowing certain businesses and industries to start or to expand; a rigorous restriction of credit may have the opposite effect. Moreover, an extension of credit may support bullish speculative activity; while drastic restriction will precipitate a liquidation of speculators' and dealers' stocks and a decline in the prices of commodities and securities. The influence to be exercised by the banks acting in concert is appreciated by a small but increasing number of bankers who naturally look to the new central banks for leadership.

It is probable that periodic changes in the liberality of commercial bankers are of less importance in Canada than in the other three Dominions. There are three or four lines of argument which support this conclusion. First, because the Canadian banks have apparently been less willing to extend long-term agricultural credit, they do not occupy so strategic a position in regard to the development or reorganisation of agricultural areas. Secondly, the relatively advanced state of the Canadian security market must in some degree free Canadian industries from dependence upon the banks, while at the same time giving to the banks a field for more liquid (in the sense of more marketable) investment than is available elsewhere. Thirdly, the Canadian economic and financial system seems to have reached that stage of development, already reached by the United States and Great Britain, where a long-run decline in demand for bank credit has set in;[2] the other Dominions do not seem to have reached the same stage. Just how far the downward trend is caused by the development of the capital market (how far this third point is the same as the second), and how far it is caused by changes in the economic

[1] For a development of this view see A. F. W. Plumptre, "Central Banking Machinery and Monetary Policy," in *The Canadian Economy and its Problems* (H. A. Innis and A. F. W. Plumptre, eds.), The Canadian Institute of International Affairs, Toronto, 1934, pp. 198–9.

[2] J. Douglas Gibson, "The Changing Character of Bank Assets," *Canadian Banker*; Vol. 45, no. 2, January 1938, pp. 151–4.

structure, cannot be determined here. Fourthly, some Canadian borrowers have access to bank credit in neighbouring American cities. Instances would most easily be found amongst those who speculate in wheat or securities. Moreover, the development of branch plants of American concerns, which can secure accommodation either north or south of the international border, results in this very important section of Canadian industry being much less dependent upon Canadian banks than it otherwise might have been. In other Dominions—and in Canada as well—borrowers may have access to accommodation in London; but the facility with which Canadians may seek American sources of credit is unique.

Other Short-Term Lending.—In all the Dominions the commercial banks are by far the most important institutions in the field of short-term lending; but there are others which deserve mention. For the most part these others lend to individuals; to finance either consumption or speculation. The finance companies, which support the purchase of all sorts of goods on time-payment or hire-purchase plans, have grown very rapidly. Because their facilities are chiefly available in relation to the purchase of such durable consumption goods as automobiles, radios, sewing machines, etc.—the demand for which exhibits a marked cyclical variation—there can be little doubt that the operations of companies of this type do serve to aggravate cyclical movements of business. But there is no reason to suppose that the rates of interest which they charge are factors of importance. True, there are plenty of complaints expressed regarding their rates; but these refer to their excessive height and not to their movements. Actually the rates are probably pretty stable.

Apart from the banks the chief source of funds for private speculation is the life-insurance companies: at least this seems to be the case in Canada and South Africa. Officially the companies disapprove of policy loans because they impair the estate of the borrower in the event of his death; but actually the volume of loans is at times considerable. As for the rates charged on policy loans, these fluctuate little if at all. A maximum rate for such loans is provided in many Canadian policies; and there seems to be a strong tendency for the prescribed maximum to become the actual at about 6 per cent. There is some political pressure in Canada to enact Federal legislation limiting the rate to about 4 per cent., following the example of some American States; and no doubt if such legislation reduced the profitability

of policy loans, the insurance companies would be even less willing to make them. At neither level is the rate likely to be a very important factor influencing the demand for loans, for they are contracted either in time of borrowers' emergency or else in the hope of using the funds to make speculative profits of a much greater proportion.

Deposit Rates.—Movements of the rates on various types of bank deposits seem to excite less public emotion than movements on bank loans. Perhaps it is that widows and orphans are not sufficiently vocal in the face of reductions in rates; or that nobody pays sufficient heed to their financial spokesmen. Nevertheless, deposit rates are not without their significance. The rates paid upon some types of deposits, notably those in which businesses hold their temporary surpluses, bear a competitive relationship to the rates on short-term gilt-edged securities. Movements of deposit rates are likely to be reflected in the yields of such securities, and the converse is also true, although the reaction in this case is not likely to be nearly as sensitive. Where there is anything of a market in treasury bills, these are the securities whose yields are likely to be most intimately associated with deposit rates.

Certain other results are sometimes quite wrongfully associated with movements of deposit rates. In some quarters the belief still lingers that when the banks and other institutions lower their rates deposits will be withdrawn wholesale. This might be true of an individual bank which alone lowered its rates; but for a banking system as a whole it is most unlikely (as long as the deposit rates do not fall below zero). While the existence of rates of interest on deposits may still, in rather backward rural areas, be a factor tempting people to bring out hoards from under the mattresses or behind the chimney corners, there is little likelihood that reductions of rates would produce an appreciable tendency to revert to hoarding. The only real threat to the volume of deposits is that reductions of rates may lead certain business men and financiers to transfer their balances abroad; and this (in those Dominions in which a policy of stable exchanges with London or New York is maintained) would indeed result in a loss of deposits and a loss of foreign funds by the banking systems. If the movement seemed to be of importance, it might easily be checked by offering special concessions to those contemplating the removal of their balances. Apart from this eventuality, the banking systems of the Dominions need have no fear in varying deposit rates to suit local conditions.

III. Long-Term Rates

Frontier Developments.—Young countries develop by leaps and bounds.[1] Their periods of economic expansion are associated with the introduction of new techniques of production and transport and with the exploitation of virgin natural resources. The gold rush, the land boom—these are characteristic. Rapid changes in the population take place : changes in its location and changes in its age and sex distribution. There is a consequent alteration in the needs for public utilities—schools and roads and hospitals and offices—and in the needs for governmental machinery. Quite a short period of development may be revolutionary in its redistribution of prosperity and political power. The outcome of each spasmodic burst is beyond rational prediction. It is a matter for unbridled optimism and unleashed activity amongst political and business leaders alike. There can be no nice comparison of costs with revenues (along the lines portrayed by economic theory)—that is, comparison of the costs of projected capital development in terms of interest obligations with the revenues to be derived from expansion. "It would be heresy to ask whether rapid development which involves mortgaging the resources of a young country is desirable. New countries are not in a position to ask whether capital investments are sound in the long run. They proceed in an atmosphere of boundless optimism on the assumption that there are no limits to the country's possibilities."[2] It is not surprising, in view of such considerations, that we find economists in the Dominions stating or implying that the rate and course of development are not susceptible to (normal) movements of interest rates.[3] The nearer one draws, historically or geographically, to frontier development the less significant will be the rate of interest charged to borrowers.

In general, the rewards of pioneer capital development are so uncertain that the funds have to be secured in one of four ways : (1) As a speculative venture, with the investor taking a clear

[1] This paragraph is a summary of points developed in A. F. W. Plumptre, "The Nature of Political and Economic Development in the British Dominions," *Canadian Journal of Economics and Political Science*, Vol. 3, no. 4, November 1937, pp. 489 *et seq.*

[2] H. A. Innis, *Problems of Staple Production in Canada*, Ryerson, Toronto, 1933; p. 56.

[3] See, for example, H. W. Larsen, "Banking in New Zealand." Thesis presented for the M.A. degree to the University of New Zealand, 1936 (typescript). Also Evidence presented by L. G. Melville, Economist of the Commonwealth Bank of Australia, to the Royal Commission on Monetary and Banking Systems in Australia in May 1936, published by the Bank, p. 9. Also J. T. Bryden, "The Effects of Movements of Interest Rates," *Canadian Journal of Economics and Political Science*, Vol. 3, no. 3, August 1937, pp. 434–9.

equity interest rather than a creditor interest. (2) As a loan guaranteed or issued by the Government and in effect secured, not on the specific resources to be exploited, but on all the resources of the country, known and unknown. A variant of this is the heavy subsidisation of private capitalists by the Government —in the form of monies, lands, etc.—to the point where private lending at current rates seems a good gamble. Such is the story of much of the railway development of the North American continent. (3) Capital may be accumulated and reinvested by those actually engaged in developing the frontier; who, finding themselves in remote agricultural or mining districts, have little alternative but to plough back their surplus rewards and little interest in investments lacking the speculative possibilities of the frontier. (4) Funds may be lent by large institutions such as banks, with branches or agencies on the frontier, in the belief that they have sufficient knowledge in their branches or directorates to prevent severe losses. In none of these four cases is it likely that variations in the current level of interest rates will directly influence the volume of borrowing and the rate of economic development.

The fact that so much frontier development has involved Government initiative, Government grants or Government guarantees may suggest that, after all, interest rates are factors of importance. Surely, if Governments had not had access to relatively low rates, less responsibility would have fallen upon them? The answer to this question can only be elucidated by reference to the actual processes of borrowing and lending. The capital markets of the world, whether in London or whether, considering more recent events, in the Dominions themselves and in New York, are not such " perfect markets " that the prevailing rates may be regarded as the sole forces harmonising demand with supply. Much more depends, or has depended in the case of frontier developments, on the willingness of lenders to lend and issuing houses to sponsor flotations at currently accepted rates.[1] In other words, variations of rates have by no means adequately reflected the degree of changes in willingness to lend and to take up security issues. Willingness to lend to Governments, which could tap the income from wide areas and diverse resources, has been much greater than willingness to lend to private pioneer borrowers : a natural propensity which has been encouraged in the London market by the preferred position given to the Dominion

[1] Cf. A. T. K. Grant, *A Study of the Capital Market in Post-War Britain*, Macmillan, London, 1937, especially Part III, " The Long-Term Capital Market."

Governments under the Colonial Stock Act. These Governments have been absolutely essential links in facilitating the flow of capital into undeveloped regions and industries. Without their intervention and assistance, private borrowers for the most part simply could not have raised the capital; even had private concerns thought themselves justified in offering bonds yielding very high returns—15 or 20 per cent.—this would have frightened rather than attracted investors. We are left, then, with two conclusions: first, that the matter of rates has not been, in any direct sense, a deciding factor in determining that Governments should play a very important rôle in frontier development because it was usually Government intervention or nothing; and second, that for the Governments themselves changes in rates have only been one indication, and probably not a very influential one, of the prevailing liberality of the lending group. Thus, if variations of rates have been only a minor reflection of the changes of opinion amongst lenders, and if, as we have previously suggested, the borrowers have not been in a position to weigh the costs of development against its possible revenues, we are led to conclude that neither the supply of loans nor the demand has been responsive to—dependent upon—the rate of interest. In short, interest rates cannot have played much part in determining the amount of borrowing. When lenders felt inclined to lend, they did so, and between two successful borrowers the spread of rates might roughly reflect the degree of risk which the lenders attached to each; but there was no guarantee, no likelihood, that the borrower offering the highest rate would get the loans he sought or that all the borrowers' demands would be met.

Secondary Industries.—The Dominions are no longer accurately described as young countries; they are only fairly young, some rather older than others, but all having lost their extreme immaturity and simplicity of economic organisation. We are led to turn, then, from the development of frontiers, with its emphasis upon the extractive industries and the problems of transport, to the development of secondary industries. Here we might expect to find interest rates exercising much greater influence over the course of expansion; for rational prediction seems much more possible. Moreover, secondary industries seem to have a relatively secure source of labour and resources (in the form of raw materials), they seem to be faced by relatively stable demands, and their expansion, while of great social and economic significance, is not likely to be so rapid, so revolutionary and so unpredictable in its general effects.

Nevertheless, despite the relative assurance with which secondary producers can peer into the future, weighing possible revenues and costs, it remains doubtful how far variations in current interest rates have effectively modified the expansion of their businesses. Expansion has usually been financed by means of ploughing back profits, with occasional and temporary, but very necessary, assistance from the banks. This process of ploughing back takes place in a piecemeal and semi-automatic fashion; theoretically, of course, a board of directors or salaried manager might consider whether it was better to plough back or alternatively to invest accruing surpluses in interest-bearing securities issued by Governments and other industries, but actually it is doubtful whether this sort of decision has played an important rôle in directing the course of expansion. It is specially doubtful whether such decisions have been important in the development of family enterprises and proprietary companies in which forms the greater number of the Dominions' manufacturing businesses have grown up. In so far as any business is profitable, it expands automatically, feeding upon its own profits largely regardless of changes in the cost of borrowing.

Tariff rates rather than interest rates have been dominant factors in regard to the expansion of secondary industries in the Dominions. To the greatest extent in Canada, and to the least extent in New Zealand, they have served the national policies of economic diversification. As one of the early tariff enthusiasts in Australia put the matter: "To live on the back of a merino sheep is easy but it is not inspiring." [1] Protection has resulted in industrialisation and in urbanisation and in the development of local capital markets. Many family concerns, many proprietary companies, have become public companies with shares widely distributed—much more widely distributed than the control. The dependence of secondary industry upon its own profits as a source of expansion is not nearly so great as it used to be; nor is its dependence upon the banks. It may be that these latter-day changes are resulting in more attention being paid to interest rates when development is under consideration; especially in Canada where issues of bonds and debentures are sometimes used to secure industrial capital.[2]

[1] The *Sydney Bulletin*; quoted by Herbert Heaton in "The Development of New Countries: Some Comparisons," *Minnesota History*, Vol. X, no. 1, 1929, p. 14.

[2] Sometimes, but by no means always. In Canada (as in Great Britain, cf. A. T. K. Grant, *op. cit.*) the new issue market in bonds, and to a lesser extent in stocks, is chiefly a channel through which going concerns are sold to the public or existing bank loans are refinanced.

Governments and Local Authorities.—We may distinguish roughly between those borrowings of Governments and local authorities which are for emergency purposes, such as unemployment relief in a severe depression, and those for developmental purposes. The former are little responsive if at all to variations of interest rates; although very high rates combined with the warnings of sound finance may steel the wills and harden the hearts of politicians in the enforcement of rigid economies. Whether strict economy in bad times is desirable cannot be discussed here.

Expenditures for developmental purposes—that is, for purposes of a productive if not revenue-producing character—may be to some extent responsive to alterations of interest rates. This is not likely to be the case in any marked degree if the development is on the frontier and concerns the exploitation of virgin resources. If, on the other hand, it is on a less ambitious scale, and if it is undertaken in a well settled district where the economic possibilities are ascertainable, there may well be some comparison, albeit not very clear or close, of the interest obligations incurred by public works over against the necessary increase in tax burdens. Higher interest rates would involve higher taxes, and act as a deterrent to expansion.

It may well be, although at first sight it appears unlikely, that the borrowing of local authorities, municipalities, boards, etc., is generally undertaken on a sounder, more intelligent financial basis than the borrowing of Governments. This appears unlikely, because the political leaders who reach the higher seats of government are for the most part of a higher calibre, and so are the civil servants employed by them. It may be, also, that there is more room for graft and petty politics in the less important bodies; although the field for muck-raking is by no means confined to them, and the bigger issues provide the juicier plums. But over against these considerations there are others which seem to decide that the smaller bodies borrow more intelligently. The smaller units, with their lesser horizons and lesser projects, have a better opportunity to take all the relevant matters into consideration. Moreover—and this is the important point—they are usually forced to give these matters consideration. They have less ready access to the open capital markets; and in their search for capital they may have to reply satisfactorily to the questions of large investment intermediaries (for example, insurance companies) on the one hand and of supervisory Government departments on the other. The investment intermediaries

are likely to take a more independent and exacting attitude in the face of the smaller, less powerful borrowers. The supervisory Government departments usually lay down certain rules to guide the borrowing of their subject boards and local authorities, rules which frequently are much more rigorous than those that the Governments apply to themselves; and this is specially the case in regard to provision for sinking funds. Further, the systems of accounting and taxation are usually such as to make the effects of interest payments upon taxation specially clear in the case of local authorities; for it is their custom to apportion their taxes upon an ascertained object (the assessed capital or rental value of real estate), and it becomes clear immediately that such and such an increase in interest costs would raise the tax rate by such and such an amount. For all these reasons, it seems probable that the borrowing of local bodies, particularly in well-settled districts, is done on a rather more business-like basis than is to be found, perhaps than is possible or even desirable, in the case of Governments. Accordingly interest rates are probably more influential.

The conclusions of the foregoing paragraph, while almost certainly applicable to Canada, and probably also to South Africa and New Zealand, need some modification in respect of Australia. This is on account of the Loan Council; and the Financial Agreement whereby the long-term borrowing of the six Australian States and the Commonwealth have been consolidated under the jurisdiction of that Council. Its approval is legally necessary for all long-term issues of these Governments, and the Commonwealth Bank has since 1931 refused to take up Treasury bills unless approved by the Council. At meetings of the Council the several States are usually represented by their Premiers who are also their Treasurers, and the Commonwealth is usually represented by the Treasurer who has two votes plus a casting vote. Each of the seven representatives is naturally interested in ensuring that, while his Government gets its fair share of whatever money is raised, no other Government gets an unduly large proportion. The result is, of course, a more careful scrutiny of proposals for Government borrowing than would otherwise take place. On the other hand, the effect may have been to encourage laxity instead of strictness in the borrowing of local authorities and semi-Government boards conducting public utilities of various types. These authorities and boards are beyond the control of the Loan Council. In 1937, and even more conspicuously in 1938, New South Wales and other States

which were dissatisfied with their quota of funds under the Financial Agreement have given independent borrowing powers to existing boards and set up other boards with similar powers. There is thus a tendency to throw upon local authorities some financial responsibilities that might otherwise—perhaps better—be undertaken by the States. We may conclude that, under the peculiar arrangements existing in Australia, the States have bound themselves to a rigorous financial régime, including strict provisions for sinking funds, while some borrowing, of a nature considered dubious by the majority of the Loan Council and the Commonwealth Bank, is being shifted on to the shoulders of local authorities and boards.

IV. Conclusion—Interest Rate Policy in the Trade Cycle

Fluctuating Rates.—From the discussion in Section (iii) of this article it seems justifiable to conclude that long-term interest rates, within the limits of their ordinary fluctuations, are variables of relatively minor importance in relation to any large-scale undertakings in the Dominions. This is so whether the initiative for development lies in private or public hands; and is especially so if the undertaking concerns the opening up of new areas and the exploitation of new resources. Variations of rates are more important in the thickly settled districts, where their influence upon secondary industries and the demand for capital goods may be of appreciable and growing importance. Thus in good times both public and private enterprise is likely to be affected by prevailing and expected rates. Local authorities are probably more susceptible than Governments with larger problems and wider jurisdiction (except in Australia). In bad times there will be little private borrowing, whatever the rates may be; and public borrowing for the relief of unemployment is not likely to respond very greatly to changes in rates, although some shift between direct relief and more expensive relief works may be caused.

So much for long-term rates. As for short-term rates, their influence is generally less. Very much more depends upon the general credit policy than upon the interest rate policy of banks and other financial institutions. Under certain circumstances, however, low rates may encourage a revival; and it is certain that a sharp rise of rates accompanied by curtailment of credit will cause dealers to liquidate their holdings of securities and basic commodities, and thereby precipitate a recession of prices. Short-term rates are also important in that some of them bear

a competitive relationship to longer-term rates: for instance, under some circumstances a movement in certain deposit rates may be a necessary prelude to a movement of the rates upon Government and other securities.

In short, movements of interest rates are not sufficiently influential, even were they completely under control, to exercise any irresistible pressure upon the course of development in the Dominions. On the other hand, it can be seen that they do exercise some influence in some quarters; and that a further quite important influence is exercised by the credit policies of the banks. Interest rate movements, if they are harmonised with alterations in credit policies, are by no means negligible in their importance.

For these reasons a policy of fluctuating interest rates, supported as far as possible by appropriate alterations of bank credit policy, seems the desirable one in the face of the cyclical recurrence of good and bad times. (The effects of changes of interest rates and credit policy upon the balance of international payments and the foreign exchanges must not be neglected, but could not be discussed in this article.) The proper policy is, it seems, the orthodox one; with rates rising as prosperity flows in and falling as quickly as possible when it recedes. In addition to the economic arguments for this policy, there are social and political ones. When most incomes are falling, and when prices and the cost of living are coming down, it is expedient that the rentier element in the community should be making some sacrifices. In the Dominions these will probably include reductions in contractual interest obligations of various sorts, as well as in current interest rates: for the lightening of the load of debt is very slow if only current rates fall. This is especially so where many short-term rates, which might fall quickly and bring early relief, are by custom or design held immobile by large lending institutions. Finally, if it is desirable, for political as well as economic reasons, that there should be some reduction of rates in depression, then it is necessary that there should be some increase in prosperity. What comes down must go up.

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DEPRECIATION AND INTEREST [1]

AMID the welter of disagreement in monetary theory there is a consensus of opinion regarding the factors immediately [2] determining the level of investment. These are held to be the rate of interest, expected quasi-rents, and the cost of capital goods, the last two being sometimes amalgamated in the term "marginal efficiency of capital."

It has furthermore been recognised in a general way that the effect of any likely change in the rate of interest on the incentive to invest in a particular capital good is larger or smaller according as the expected earning life of the good is long or short. There has, however, been no published attempt to show, even roughly, the quantitative importance of this fact: nor has it been specifically related to our factual knowledge, such as it is, of the length of life of capital goods.

The investigation required is an estimate of the proportion of the expected quasi-rents which must be earmarked for interest payments as against the proportion required for repayment of capital outlay, which will be a measure of the relative importance of capital cost and the rate of interest in investment decisions.

For a marginal unit of investment we have the familiar equation :—

$$\Sigma\left\{\frac{Q_n}{(1+r)^n}\right\} = C \quad . \quad . \quad . \quad . \quad . \quad \text{(i)}$$

over the expected [3] earning life of the capital good.

Where Q_n is the expected quasi-rent in the nth year, r the rate of interest expressed as a fraction of unity, and C the marginal cost of the capital good. The expression ignores any risk premium which may be required to induce the investment decision, as we are considering only the relative importance of pure interest and depreciation charges.

[1] We are indebted to Mr. and Mrs. Richard Stone for advice in connection with this article.

[2] The controversy concerns the underlying determinants of these factors.

[3] It is clear that *ex-post* the expectation of life, like any other human expectation, may prove to be wrong in either direction, but this does not affect the argument.

The ratio in which we are here interested is

$$\frac{\Sigma Q_n - C}{\Sigma Q_n}$$

or

$$1 - \frac{\Sigma\left\{\frac{Q_n}{(1+r)^n}\right\}}{\Sigma Q_n}$$

Call it θ.

In order to evaluate this ratio exactly it is of course necessary to know the exact form of the curve of quasi-rents through time—that is, the relation between Q_n and n. On the other hand, it is clear that those who frame the investment decisions do not generally know enough about the future to form more than the very simplest ideas as to the probable future course of quasi-rents. We have therefore evaluated θ numerically, at various rates of interest, for two hypothetical relationships between n and Q_n, which between them seem likely to cover a very wide range of actual cases to a sufficient degree of approximation to indicate the order of magnitude of θ.

The first case is that in which the quasi-rents are expected to continue at a constant level for N years, and then cease altogether, that is, Q_n = a constant Q for $n = 1$ to N and $Q_n = 0$ for $n > N$. The second case is that in which the quasi-rents decrease at a constant rate per unit of time, becoming zero in the $(N + 1)$th year.

These two types of relation were chosen because it seems likely that a very large number of actual cases of expectation of quasi-rents, in so far as they are formulated at all, will approximate to one or the other, or to a convex falling curve, reaching zero after N years, which may be regarded as intermediate between them. The only cases which will lie outside this range are: first, those in which the expected quasi-rents lie on a falling curve so concave that it cannot be regarded as approximating to a straight line; it seems unlikely that these are common; and secondly, those cases in which the quasi-rents are expected to rise through time. These last will occur mostly where expenditure must be incurred in laying down capital goods for several years before business is begun; but then the capital goods are almost certainly of a long-lived type in which interest charges anyway absorb a large proportion of quasi-rents, and the effect of the waiting period is merely slightly to enhance this.

If therefore we can estimate θ for the two artificial cases given and all cases intermediate between them, this field seems likely to cover the majority of investment decisions.

Now, in the two limiting cases, the series involved in calculating θ [see (i)] can be integrated [1] generally in terms of r and N, and θ evaluated arithmetically for particular numerical values of r and N. It is then found that, with probable rates of interest and to the degree of accuracy in which we are interested, the values of θ given by the two limiting cases do not diverge very widely. The values for various lengths of life at a rate of interest of 4 per cent. are given below in illustration. Column I gives θ for the limiting case of constant quasi-rents, and Column II for the case of linearly declining quasi-rents.

N (yrs.)	I	II
50	0·57	0·45
40	0·51	0·37
30	0·42	0·31
20	0·31	0·22
15	0·25	0·17
10	0·18	0·12
5	0·09	0·06
3	0·06	0·04

Some figure between those in the two columns will therefore, for any given length of life, be a rough estimate valid over a very wide field of what we set out to find—namely, the proportion of expected quasi-rents which must be earmarked for payment of interest charges, as against repayment of capital; in other words, the relative importance of the rate of interest and the cost of capital goods in determining investment decisions.[2]

We append a contour diagram showing values of θ, calculated according to the above method, taking mean of I and II plotted against length of life and rate of interest. It is clear that curves of constant θ will be rectangular hyperbolæ.

The possession of this diagram and a knowledge of N are not, of course, by themselves sufficient to determine the effect of a given reduction in the rate of interest on investment in a given type of plant. We should also require knowledge of the elasticity of demand for the plant, which depends on such things as the elasticity of demand for the product it helps to produce, elasticity of supply of other necessary factors, and their elasticity of substitution with the given type of plant. But it is clear, for example, that, unless these elasticities are exceptionally large, a reduction

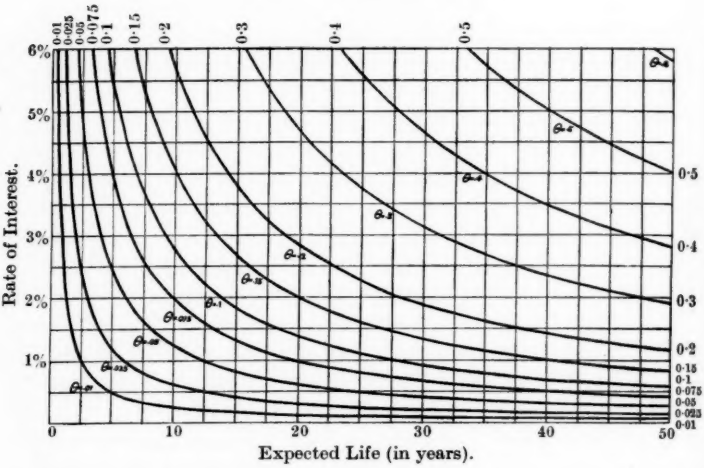
[1] The ratio is evaluated on the supposition that quasi-rents flow in continuously, rather than in lumps at the end of each year, so that equation (i) needs to be slightly modified. We are indebted to Mr. D. G. Champernowne of King's College for expressing the integrals in a convenient form.

[2] The ratio, of course, applies to a given type of plant the length of life of which is known, but by using a suitable system of weighting it should be possible to obtain some idea of the value of θ for industry as a whole.

in the rate of interest as large as 1 per cent. from the present rate is likely to have only a very small direct effect on the rate of investment in capital goods having a life of five years or less, since pure interest charges anyway absorb considerably less than 10 per cent. of the total expected returns. By far the most important item in cost is depreciation—that is, repayment of initial capital cost.

This leads to the conclusion that there is more hope of stimulating investment in goods of this type through lowering their price by, say, a reduction of the degree of monopoly in the capital goods-producing industries or any other method, than through any feasible reduction of the rate of interest. Such considerations

Contour Diagram of "θ."



are particularly pertinent in England to-day since the rise of the Iron and Steel Federation, bolstered up by tariffs, and more attention might well be paid to this aspect of investment policy.

There is also an interesting field for speculation as to whether the influence of the rate of interest on investment is being reduced by a tendency towards a reduction in the average expected life of capital goods in industry as a whole, caused by political uncertainty, rapid technical progress, fickleness of demand, or the prospect of a declining population.[1]

An example is the motor-car industry, in which changes of

[1] It may, however, be the case that this tendency is more than compensated by the increasing capital expenditure of public and semi-public authorities of various kinds, which tends to be of a long-lived character.

fashion require radical changes of heavy machinery every few years. In this case fickleness of demand does not take effect as uncertainty in the usual economic sense. The entrepreneur is not in a position of uncertainty as to whether the fashion will change, so that a premium is necessary to compensate him for his risk : rather he knows for certain that the fashion will change, and therefore uses machinery which will be worn out sufficiently soon to enable him to follow the fashion change.

If common opinion is any guide, a similar change, although for different reasons, is taking place in the housing industry.

Although the practical difficulties are considerable, it should be worth while to make a realistic investigation of the distribution of expected life among capital goods.

As a preliminary study, and to indicate the kind of investigation required, we shall make use of some depreciation figures of capital goods in the United States which happen to be available.[1]

In using such figures it is necessary to make two assumptions : first, that this is a rational world in which depreciation allowances are not dependent on the rate of interest, or on anything except the expected earning life of the capital goods ; [2] and secondly, that the play of bargaining between business men and the Internal Revenue authorities—from whom most of the figures are taken—has achieved some sort of approximation to the proper figures.[3]

Depreciation rates are given [4] for buildings in general, and for a large selection of plant and equipment in the following industries :—

Power-generating and Electrical Transmission Equipment.
Machine Shops and Metal-working Plants.
Foundries and Rolling-mills.
Manufacturing of Lumber and Wood Products.

[1] Alford, *Cost and Production Handbook*, pp. 1242 *et seq.*, quoted from E. B. Kurtz, *Life Expectancy of Physical Property*. For England, only scattered figures seem to be available. Local Authorities amortise their loans on the following bases (prescribed by the Ministry of Health).

Land	80 years.
Houses	60 years.
Sewers and Drainage	30 years.
Roads	20 years.

There is also general agreement that the expected life of a ship is 20 years.

[2] The rate of interest will affect only the expected profitability of the investment.

[3] The difficulties in the interpretation of depreciation allowances, raised by Gabriel A. D. Preinreich in *Econometrica*, July 1938, do not seem to be important at the level of approximation required for our purposes.

[4] See Alford, *loc. cit.*

Leather and Leather Products.
Rubber Goods.
Food and Kindred Products.

Random samples were taken from each of the above industries, and the depreciation figures converted to life-expectancies on the above assumptions. We then took an unweighted average of the life expectancies in each industry. In a study with more pretensions to exactitude than this, it would be necessary to weight the life-expectancies according to the total expenditure of the industry on the capital goods concerned, since it is quite possible that the more expensive types of equipment tend to be longer-lived, but the information necessary for such weighting was not available to us.

The results obtained for the approximate average life of equipment were as follows :—

Industries.

Buildings	33 to 50 years
Power-generating and Electrical Transmission Equipment	about 20 years
Machine Shops and Metal-working Plants	„ 15 „
Foundries and Rolling-mills	„ 16 „
Manufacturing of Lumber and Wood Products	„ 18 „
Leather and Leather Products	„ 18 „
Rubber Goods	„ 14 „
Food and Kindred Products	„ 15 „

Except for occasional items,[1] there was on the whole not a very wide dispersion about the means.

Figures were also given for motor-cars and commercial vehicles, the life-expectancy of which apparently varies from three to seven years.

Assuming a rate of interest of 5 per cent. and using the contour diagram above, the ratio of aggregate interest charges to total costs will be, for buildings, from 0·45 to 0·57; and for the industries mentioned, from 0·25 to 0·33, very approximately.

However approximate these figures may be, they make it clear that interest charges will absorb a very considerable proportion of expected quasi-rents of equipment, over quite a wide

[1] The extreme upper limit in life-expectancy was provided by the case of water-wells, estimated at 200 years. This may be contrasted with certain heavy presses, used in the motor industry in England, which are reputed to wear out in two years.

field of industries. This provides part of an answer to those who maintain that the rate of interest has no particular effect on the actions of business men.

A further answer is provided by a quotation by Alford from the maxims of the Blanchard Machine Co., which runs as follows :— "Money set aside to cover depreciation should be spent at once for new machines because . . . money invested in modern tools earns more than when invested in securities."

If we assume that the precept would be annulled when its premiss was no longer true, we have, at any rate in this isolated case, an exact statement of the kind of consideration of alternatives postulated in modern investment theory.

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VERTICAL INTEGRATION AND THE IRON AND STEEL INDUSTRY

THE iron and steel industry is well known to be an industry in which the integrated unit is the typical form of organisation, and detailed examination shows that much the greater part of the output at all stages is controlled by integrated concerns; some statistics for this country and for the United States are given in an appended Note. It is possible to find cases of other industries in which the greater part of the output is integrated,[1] but this is usually because of the dominance of one large concern or other similar reasons; in no other industry do we find the integrated firm as the *typical* unit, as it is in iron and steel in all countries where the industry exists.

This has led various writers to suggest that there must be circumstances peculiar to the industry which stimulate the development of integration. As yet, however, these have not been discovered. Marshall suggested two possibilities, but neither is, in fact, of much importance.[2] The probable true explanation is that the industry is marked in a somewhat exaggerated form by those general features which would tend to integration in any industry.

It is usual to distinguish "lateral" from "vertical" integration. This is useful, in that it isolates the latter type; but it is inadequate for any broader analysis, for it implicitly lumps under the head of "lateral" widely divergent forms of integration, of which can be distinguished at least six main types apart from the vertical. For present purposes, however, it is sufficient to distinguish clearly this vertical type; this is best done in the definition given by Professor A. R. Burns[3]:—

> "Vertical integration relates to combinations of operations such that the finished product of one is the raw material of another."

[1] See Willard Thorp, *The Integration of Industrial Operation* (1924), for certain American cases. This book is based on data collected for the 1919 Census of Manufactures, and is an invaluable source of information.

[2] *Industry and Trade*, pp. 218–21. The two factors suggested are the fact that different sections of the "industry" (*e.g.*, coal-mines and steel-plants) produce to a greater degree for each other than is usually the case in other industries, and the possibility of fuel economies. The first does not bear any close examination; to take the example given, it is by no means the general case that integrated firms use their own steel in their own collieries. The second is examined below.

[3] *The Decline of Competition* (1936), p. 418.

With regard to the industry studied, we are concerned largely with the main stream of processes from the production of the materials used in making pig iron to the production of finished rolled products, which, of course, may be semi-finished products for use in other stages (*e.g.*, tinplate bars or wire rods). We thus exclude the smaller finishing trades and the industries which use the products of the iron and steel industry, as well as certain processes which branch away from the main stream, such as the foundry process, or the treating of by-products.

Some writers take the view that integration is in some way a "natural" line of development which must be taken by industry. Thus one American writer [1] refers to it as "the fundamental force now at work for the re-organisation of our industrial system," and supports this proposition with a narrative of the formation of the United States Steel Corporation—as interpreted by those who were primarily responsible for this development. He thus quotes Mr. Schwab's *post hoc ergo propter hoc* dictum—"(Before integrated combines) everything was disconnected and disjointed. It was not until the whole process was welded into a continuous chain under one management that the American iron industry began to make its giant strides which have now carried it into a position where it dominates the whole world." It is evidence such as this which leads to the conclusion, stated in biological terms, that "evolution as a method of progress, stated in the simplest terms, may be said to be differentiation of function and the concomitant integration of parts."

Against this can be set the view that the "natural" direction of industrial development is towards greater specialisation. This was argued, and much more cogently, by Lavington,[2] who based his analysis on Marshall's suggestion, made in *Industry and Trade*, that horizontal rather than vertical growth is typical in modern industry. The argument put forward is that the "representative economies" of industrial methods involve specialisation, and that, apart from monopolistic tactics, the most powerful influence on the structure of the business unit must be the need for the "concentration of human faculty on a narrowed range of tasks." The force of this argument is weakened by Professor Robertson's suggestion [3] that integration "does not imply any reversal of the tendency to differentiation among machines,

[1] W. W. Willoughby, "The Integration of Industry in the United States," *Quarterly Journal of Economics*, 1901.

[2] "Technical Influences on Vertical Integration," *Economica*, March 1927.

[3] *The Control of Industry*, pp. 32–3.

manual workers and the subordinate grades of brain workers, which may indeed become more elaborate and complete. It is only in the hands of those who are in supreme control of the processes of industry that there is any tendency for functions hitherto divided to be reunited." Nevertheless, this does not dispose completely of Lavington's analysis, and we are left in the inconclusive position that it is impossible to decide which is the more "natural" development. This need not occasion surprise, for broad arguments of this type usually are inconclusive, and it is necessary to turn to more particular matters.

The various motives and causes of integration can be grouped under three main heads (although there is such an embarrassingly large selection from which to choose that the division cannot be perfect). The first can be termed financial; the second includes economies in production or in organisation; the third relates to all forms of strategy, or, as termed by Professor Macgregor, "resource."

There are many financial motives which are often suggested as contributory causes, but closer examination usually shows that although they may be general causes of combination, they do not relate solely to integration. For example, the familiar "surplus profits seeking investment" motive is of this character. Certain integrated firms have developed partly on the basis of accumulated profits (there are several cases of this in the iron and steel industry immediately after the Great War), but it cannot be shown that this is a fundamental factor leading to integration; there is no inherent reason why such surplus profits should be invested in any one direction rather than in any other.

The same reasoning can be applied to other financial motives put forward,[1] and the only motive which relates specifically to integration is the supposed elimination of intermediate profits, or the increase of final profit to the integrated firm—both are essentially the same. For an expression of an extreme view, we can quote an American writer[2]:—

> "The integrated industry obtains its supplies in each stage of production at a real cost which includes no margin of profit. It is true that on the corporate records the goods

[1] *E.g.*, the desire to spread risks over more than one line of production does not necessarily involve integration; it may dictate investment in totally dissimilar lines, according to the circumstances of each particular case.

[2] L. K. Frank, "The Significance of Industrial Integration," *Journal of Political Economy*, 1925. See also E. S. Meade, "The Capitalisation of the United States Steel Corporation," *Quarterly Journal of Economics*, 1901, p. 219, and a reply by G. C. Selden, "Earnings of Integrated Industries," *ibid.*, p. 454.

> passing from one plant to another may be entered in the sales account at cost plus a profit, but since the profit, if any, goes to the integrated industry, in whole or part, this profit addition is merely nominal (*sic*). This means that the final real cost of the product sold by an integrated industry will, ordinarily, be less than the final cost of a non-integrated product, by the cumulative amount of these profit margins."

That this view is a fallacy is implicitly recognised by integrated concerns themselves—at least in the iron and steel industry—for their policy is usually to fix transfer prices from one process to the next as closely as possible to those prevailing in the open market.[1] As the integrated concern must have invested capital in all the stages of production, there must, in the long period, be a return to that capital at least equal to the return which could be obtained by investment elsewhere; as Professor Macgregor [2] stated thirty years ago, "integration does not buy its material 'at cost,' if by this is meant 'prime cost.' When two capitals are joined, it still remains necessary to pay the normal interest on both." Substantially the same is true of the short period, for the concern usually regards each "department" as a separate unit which should be able to pay its way—the addition of profit is much more than "merely nominal." The matter will, of course, depend to some extent on the manner in which the capital is raised, but in all cases it is clear that such investment does not occur without the expectation of profit, and, in the long period, without its realisation.

Dr. Thorp [3] regards the motive rather as desire for increased profits per unit of output, though he accepts the validity of the two profits analysis. To use his own example, if a coke-maker increases his capacity, then he will increase his total profits, but not the profit per unit of output. If, however, he buys a coal mine, profit per unit of output will be increased, as he now gets two profits on each ton of coke. It is difficult to see any inherent reason why one should be preferable to the other; both methods involve capital expenditure, and which is preferable will depend on the prevailing rates of return which can be obtained. If the coke-maker is being exploited in the price he pays for coal, integration is obviously desirable. On the other hand, a coke-maker who is in a good market and buying coal from a depressed industry will obviously gain by extending horizontally rather than verti-

[1] This, of course, raises many questions of detail, but the main generalisation stands.

[2] *Industrial Combination* (1907), pp. 97–8.

[3] *Op. cit.*, pp. 247 *et seq.*

cally. The argument which opposes total to unit profits is clearly fallacious; the important element is the relation of profits to the investment involved.

Dr. Thorp further adds the element of the superiority of integration in countering the effects of depression. This is again a very common belief. It was substantially this point which was made by Jeans [1] when he made, in his book on *The Iron Trade of Great Britain* (1906), the statement which has usually been erroneously interpreted as meaning that integration in the industry eliminated profits [2]:—

> "Where this (*i.e.*, integration) happens, the total profit is naturally as a rule greater than any of the individual profits, and the producer is thereby left in a better competitive position and can produce more cheaply in times of stress and strain."

It is necessary to correct this statement in one detail; unless the integration has other advantages, it does not follow that it can *produce* more cheaply, and Jeans' argument is simply that it can *sell* more cheaply, by reducing costs to prime costs at every stage. Even this, however, is not necessarily valid, for it assumes that the open market prices of the materials of the non-integrated firm do not also fall to prime costs. This assumption is unwarranted, for in Jeans' own industry, because of the extreme amplitude of fluctuations, during periods of depression it is possible to buy materials at prime cost, in some cases even below this, and cases of firms finding integration a disadvantage rather than advantage at such times are not infrequent. Given an open market as well as integrated concerns, during a depression the latter will find it necessary to reduce the transfer prices of their materials (unless, of course, they fix final prices without any consideration of the level of "costs"), and thus profits at all points will be reduced. If the industry is completely integrated, then the same result will obtain, for all concerns will tend to reduce prices to the level of prime costs.

The economies in production and organisation are often assumed without question to be of great importance. Thus Carter,[3] in the very act of defining integration, says that it consists of "the common control of one organisation over a number of parts that might . . . operate independently, though, *of course*,

[1] Secretary to the Iron and Steel Institute and the British Iron Trade Association.

[2] See, *e.g.*, G. R. Carter, *The Tendency Towards Industrial Combination* (1913).

[3] *Op. cit.*, pp. 91–2. (Italics ours.)

with less efficiency." One general element, an economy of the system rather than of the individual concern, has often received emphasis. This is, to put it again in the extreme terms of certain less cautious writers, the replacing of "haphazard making," "speculative buying," and similar evils of a specialised system by "co-ordinated control" which does "away with the maladjustment of supply to demand which still continued to exist under the regime of the horizontal combines." Integration is, indeed, the removal of "business from the control of industrial processes" (such as buying and selling), which will have the ultimate effect of "largely reducing, if not eliminating" the trade cycle.[1] It would hardly appear necessary to repeat such statements, were it not for the fact that they receive some support from so eminent an authority as J. M. Clark,[2] who states that integration represents the "underlying facts about the actual industrial organism, which is an integrated whole, whether its formal organisation is cast in that mould or not." The development of integration reduces errors in buying and selling of materials by putting them in their true position of overhead costs, instead of in that of variable costs.[3] The chief objection to this view is that, unless all economic activity (including that of the consumer) is "integrated" under one single control—and this is an extension of the idea which makes it almost meaningless—there is room for fluctuations in the markets which remain, including, of course, those for the final products. It can be argued that there would then be more, instead of less, fluctuation; because of the growth in importance of overhead costs, then there may be more extreme price fluctuations accompanying changes in demand, while if the integrated concerns aim at price stability, the conditions are present for wider fluctuations in output. It may be true that some errors in forecasting are eliminated, and the cumulative effects of such fluctuation removed; but this is not sufficient for the removal of all—or even of the main—causes of instability.

The most convincing way of showing the invalidity of such statements, however, is to observe what actually happens in an integrated industry. If the perfect adjustment of demand and supply at each stage is a reality, then we should expect to find that

[1] All quotations from Frank, *op. cit.*

[2] *The Economics of Overhead Costs*, quotation from p. 403.

[3] In the interests of accuracy, it can be noted that not *all* the cost of raw materials becomes an overhead expense to the integrated concern, but, broadly speaking, only those elements which were formerly overhead costs for the specialist producer.

integrated concerns are self-sufficient. Not only will the concern cover all the essential processes, but at every point the output of each stage will be finely adjusted to that of the preceding and succeeding stages. This is precisely what we do not find, in spite of a common belief in the existence of the self-sufficient firm (for one writer at least the terms "self-sufficient" and "integrated" are synonymous). Investigation of all firms in the iron and steel industry fails to reveal one which approaches the degree of self-sufficiency which is necessary to abolish the "maladjustments" of buying and selling. Instead we find all firms with surpluses at some stages and deficiencies at others.

To show this, the following figures relate to three firms; their identity must not be revealed, and thus we give, for various stages, indices of output and percentages used and sold :—

FIRM A.

A foundry concern, producing ore, but buying coke for iron making.

Year.	Output of Pig Iron, 1929 = 100.	Percentages of Pig Iron—	
		Used in Works.	Sold and Put to Stock.
1928 . . .	84·3	78·4	21·6
1929 . . .	100	59·9	40·1
1930 . . .	106·4	66·3	33·7
1931 . . .	105·1	62·5	37·5
1932 . . .	105·2	63·8	36·2
1933 . . .	68·0	76·9	23·1
1934 . . .	73·6	87·1	12·9
1935 . . .	122·3	53·3	46·7
1936 . . .	112·9	65·8	34·2
1937 . . .	114·9	74·9	25·1

FIRM B.

A firm making pig iron, steel and rolled products.

Year.	Output of Iron, 1929 = 100.	Per Cent. Sold.	Per Cent. of Pig Used which is Bought.[1]	Output of Steel, 1929 = 100.
1929 . .	100	13·2	—	100
1930 . .	110·2	10·3	—	100·4
1931 . .	68·0	3·3	—	72·0
1932 . .	59·9	5·7	—	61·7
1933 . .	66·5	3·0	3·8	64·2
1934 . .	86·0	1·8	4·3	93·3
1935 . .	101·3	3·1	4·6	102·8
1936 . .	121·1	2·1	6·7	120·9
1937 . .	143·1	13·7	6·8	134·8
1938 . .	154·3	13·5	5·7	142·0

[1] Special quality of pig iron.

FIRM C.

Completely integrated concern, making finished rolled products and semi-finished rolled products from which are made a final product.

Year.	Output of Coke 1930 = 100.	Per Cent. Sold.	Output of Iron,[1] 1930 = 100.	Output of Steel Ingots,[1] 1930 = 100.	Output of Steel Billets, 1930 = 100.	Per Cent. Sold.	Output of Semis. 1933 = 100.	Per Cent. Sold.
1930	100	1·9	100	100	100	55·3	—	—
1931	99·6	2·1	64·1	95·9	98·5	32·4	—	—
1932	116·0	13·7	71·4	117·6	148·0	17·2	—	—
1933	206·9	18·2	70·9	154·8	208·7	12·2	100	—
1934	234·6	8·8	131·1	177·4	235·2	3·9	646·8	50·3
1935	232·5	8·4	131·4	190·6	238·4	5·7	719·1	11·2
1936	263·5	3·5	139·7	216·6	288·7	4·3	802·4	14·7
1937	262·3	3·1	155·7	228·5	340·5	4·4	872·0	14·5

[1] Sales of these products are negligible.

Note.—This last firm was undergoing a process of rationalisation, which accounts for the more extreme changes shown in some of the series.

Many points of interest emerge from the study of such figures,[1] but the main point for our present purpose is the obvious lack of any constant relation between the outputs at each stage, with consequent variation in sales of the product, or purchase of materials, at each stage. There never is, in fact, perfect balance between the different stages, while the degree to which such balance is approached varies from time to time. Such variation can be explained on several grounds. Given the fact that the firm is not self-contained, then its output at various stages will be varied according to market conditions. It has long been recognised—even by those who accept the existence of self-sufficient firms as obvious—that the integrated concern does in fact depend on the open market to dispose of outputs other than that of its final product; indeed, this is regarded as one item in its superiority over the specialised firm. Thus, to quote Carter,[2] " the self-sufficient firm is in a better position to exploit the various market conditions, entering the market as pig iron producers at one time and as finished iron or steel manufacturers at another time; or when (both) the iron and steel markets are favourable, it can engage in producing for them both." How it pursues this last policy and remains self-sufficient remains unexplained;

[1] The three cases are given solely as typical examples; others could also be given, but as yet I have not sufficient data to measure the degree of overlapping in the industry as a whole, and there is little point in multiplying examples.

[2] *Op. cit.*, p. 106.

it is enough to note that the lack of balance is a well recognised phenomenon.

Even though the firm did attempt to achieve perfect balance, there would still be some aberrations. Short-period fluctuations in output could not be entirely avoided; here it must be remembered that although there might be perfect balance for one level of output, because of the indivisibility of units of capital a change in that level would, in all probability, upset that balance.[1] Further, certain technical factors would limit the extent of self-sufficiency. The iron and steel industry provides a good example of this in the linking up of coal-mining with coke-making. The colliery which produces only coal of suitable coking quality has yet to be found, and thus iron and steel concerns invariably produce some coal which they cannot use themselves and which must be sold.

The main factor,[2] however, and one which may prevent the firm from seeking self-sufficiency, is the differing optimum sizes of the various stages. This has been noted by other writers; Clark [3] notes it as "the chief reason why any concern ever buys materials and equipment from other concerns."

The operation of this factor can be seen very clearly in certain special cases in the iron and steel industry. At many points the output must be large, the unit of capital being only slightly divisible. Thus production of a specialised commodity on a comparatively small scale cannot always be linked with production of the raw material used in making it. For example, there is much less integration between iron making and foundries than there is between iron and steel plants. The foundry process is often best operated on a small scale, so that the concerns must buy their iron either from specialist producers (now very few) or from integrated concerns selling their surpluses of pig iron. Even the large foundry concerns which are integrated sell a large part of their output of pig iron (see Firm A above). The same is true of many of the finishing stages in steel; the smaller re-rollers, the tool trades, and many other producers, do not operate on a scale large enough to warrant their integration with steel production. Other examples are found in the production of special qualities

[1] *E.g.*, it is easier to vary output at the rolling stage than at that of steel making, which in its turn allows more elasticity than is possible at the blast-furnace.

[2] We leave aside the "historical" basis of many integrations which have developed through absorption of formerly independent concerns and thereby often obtained various properties superfluous to their main needs.

[3] *Op. cit.*, p. 140.

of iron, such as hæmatite and ferro-manganese, which are used by all concerns but produced by few.

More generally, however, every integrated concern has to face the problem of compromising between optimum technical efficiency at every stage and a balanced flow of output. In practice the solution *is* a compromise, and the iron and steel industry bears out Burns' [1] view that "it is possible that no vertically integrated firm operates at the highest level of efficiency available in all the stages of production in which it is engaged." The different optima for the various processes do not coincide, so that firms have to modify any desire for self-sufficiency if they want to achieve maximum efficiency. Whether the solution leans toward self-sufficiency or towards maximum efficiency depends on the circumstances of the individual concern; but some form of the compromise can be seen in all.

We can, indeed, go much further than showing that the self-sufficient firm does not exist, and suggest that a great deal of the effectiveness and value of the integrated form for the individual concern depends upon its operating in open-market conditions.

Another supposed general advantage of the integration is its greater adaptability to changed conditions. The usual suggestion is that the integration, with its "direct" control over all stages, can make decisions which will be certain of being translated into practice, whereas the last of a series of specialised firms must rely upon an "indirect" system of transmission of its decision through a series of markets. There is, however, no reason to believe that the "indirect" control exercised by the market need be less effective than the "direct" control exercised in the individual concern. Indeed, it may be much more effective, for the individual concern in the specialised system has a much wider range of choice than the integrated concern, which is limited to its own organisation.[2] The latter may, in fact, be very much hampered, as change in one stage may involve sacrifice of other stages. To take an example, certain iron and steel companies which formerly used coal in their blast furnaces, and owned mines to supply it, on turning to the use of coke had no longer control over their raw material, their coal not all being suitable for coking. The two processes thus became independent entities, and the purpose of the original integration was lost. Even when this factor is not so marked, it must always be remembered that the

[1] *Op. cit.*, p. 432.

[2] This case may be affected (but not removed) by monopolistic elements in the specialised system.

integration has to take into account all the effects of a given change, whereas the specialised concern has a much narrower area of responsibility; this in itself should lead us to expect integration to be an element hindering change rather than expediting it.[1]

Substantially the same type of argument applies to the contention that the integrated concern has better control over quality of output at all stages. Adequate discussion of this point would be too lengthy to be undertaken here, but it can be noted that the control exercised through a market need not be less effective than that which exists in the form of relations between departments in an integration, while where there is needed a wide range of materials or there occur periodic variations in their character, advantage will usually lie with specialisation rather than with integration.

Of the more specific economies attributed to integration, there is one which is peculiar to the iron and steel industry, and here it is usually stressed as being of primary importance. This is the possibility of economies in the use of fuel, both by avoiding unnecessary heating of the metal and by the use of gases produced at the coke-oven and blast-furnace stages. One fact which must cause scepticism about the importance of this as a motive leading to integration, however, is that it involves integrated plants, and these are not always even now associated with integrated concerns [2]—up till comparatively recently there was a much bigger gap between the two. Indeed, the present pattern of integration in the industry was fairly well established before fuel economy became regarded as of primary importance. Further, even granting the present importance of fuel economy, there are factors which may go some way towards neutralising the value of exploiting such technique to the full. For example, in the case of hot metal practice (*i.e.*, using metal direct from the blast furnace in the open hearth steel furnace) there is imposed a limitation on the proportion of scrap which can be used in the charge. Thus the economy derived will depend on a relation between prices of scrap and costs of making iron; changes in that relation (and these do occur, with consequent substitution between the materials [3])

[1] Cf. also Burns, *op. cit.*, pp. 432 *et seq.*, for examples from other industries.

[2] For example, the firm of John Summers & Co. makes iron at its Shelton plant at Stoke, and uses this to make steel at its Shotton works; the United Steel Companies have steel plants in Sheffield, supplied with pig from Workington or Frodingham.

[3] For some interesting details, see R. F. Fowler, "Substitution of Scrap for Pig-Iron in the Manufacture of Steel," *Quarterly Journal of Economics*, 1937.

could result in the disappearance—or at least the reduction—of the gain derived from this practice. An important item in the other direction of fuel economy is that the concern usually tries to sell some of the gas produced at its coke ovens. The reason is, of course, that it produces a surplus, but it is often a matter of vital importance that this should be sold; failure to do so may neutralise the economies derived in other directions. Thus it has been estimated that the addition to cost through such failure may be as much as nine to ten shillings per ton of pig iron, while the Import Duties Advisory Committee notes failure to obtain outlets for gas as a factor hindering new construction of plants during the recent boom.[1] It is difficult to resist the conclusion that fuel economy is at times possible only because of subsidisation from outside users. The economies to be obtained are thus neither so simple nor so pervasive as is often assumed to be the case.[2] In the case of blast-furnace gas, which is of inferior quality, there is no need for integration in order to utilise it, as it can be quite well used (and is)[3] in the blast-furnace plant itself.

A source of economy invariably suggested is the elimination of merchants and middlemen. This is probably very much overestimated, for many of the functions of the middleman have still to be performed by the integrated concern. J. M. Clark, it is true, states that these are made " mere matters of routine," but to call an item " a matter of routine " is not to abolish it. In any case, the middleman is not eliminated. The iron and steel industry is still living in the expectation of such economies, and it is improbable that they ever will be realised. Not only have merchants their place in the present organisation, which is tending to become crystallised, as seems inevitable once an industry becomes " controlled," but it may be that they are necessary in a system where self-sufficiency of the firm is a fiction.

It would be labouring the analysis to deal in detail with further economies; it is sufficient to state our conclusion that a detailed examination does not give adequate grounds for belief in their importance as the primary incentive to integration.

The chief motive must be found elsewhere, and it undoubtedly lies, as is largely recognised in the industry itself, in strategy, or " resource." As is well known, the industry is subject to big

[1] *Report on the Present Position and Future Development of the Iron and Stee Industry* (Cmd. 5507 of 1937), p. 34.

[2] There are other factors involved; one is that the economies becomes greatly reduced when the plant is working below capacity.

[3] Use of blast-furnace gas in the plant has been general for over the last fifty years. There is here some possibility of economy for the integrated plant.

fluctuations in demand for its products, with consequent big variations in prices and output. Such fluctuations are, of course, transmitted throughout the whole series of processes, and analysis of price movements shows, what indeed we should expect, that the fluctuations become more intense as we move away from the final markets. The need for some form of protection against such fluctuations is well recognised in the industry as one of the primary factors leading to integration. If we take the pig iron-steel stage as the central point, then much of the integration backwards can only be explained on this basis of desire to avoid extreme prices of materials in a boom, in some cases a desire to ensure continuity of supplies.[1] The matter is especially important in that the cost of raw materials is a major item in total costs—75 to 85 per cent. in the case of pig iron and close on 70 per cent. for heavy steel. Although this element can be observed at all times, in that firms will usually take any opportunity which is offered to obtain such protection, it is seen most clearly in periods of marked instability. A good example comes in the last years of the Great War and during the early 'twenties, when steelmakers feared shortages of pig iron supplies, and many firms went into pig iron production for the first time, or extended existing capacity. Another is the recent expansion of the coke-making capacity of integrated concerns, and the addition of coking plant by those which formerly bought all their supplies.

Integration forwards arises from the need to ensure markets in a depression. Its development is closely linked with the existence of price agreements, always a notable feature of the industry. The strategy adopted has as its basis the maintenance of prices so far as is possible plus integration as a means of ensuring some market. Again it is possible to observe the continuous existence of this motive, with its intensive application in the more marked periods of instability. The immediate post-war period provides many examples of steelmakers making forward movements.

We have confined ourselves to the statement of conclusions on this matter of the primary importance of instability as the factor leading to integration. A detailed study of price conditions shows quite clearly the validity of this, but it is not possible to give detailed results here. The matter is, of course, complicated by the many cross currents of business strategy; but these are usually the reflections of the more fundamental elements.

[1] There are some cases in which integration here was defensive, in face of possible monopolisation. This was the case in the control of ore supplies in the United States in the 1880's.

The position in the industry has been affected by the development of closer control under the ægis of the Import Duties Advisory Committee. Some integrating factors (such as the growth of control at one stage tending to cause more integration backwards from the next in order) will be strengthened, while others will be weakened. This opens a new field of investigation, and one which is of great importance in view of the growing intervention by the State in industrial affairs.

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Note on the Extent of Integration in the Iron and Steel Industry

I. The United States.

The Census of Manufactures gives, for the major stages of the industry, fairly complete information of the division of output between that used and that sold. The following figures are extracted from this source.

Percentages of the Output of Products Consumed in the Makers' Works.

Year.	All Pig Iron.	Basic Iron.	Foundry Iron.	Raw Steel.	Blooms and Billets.	Sheet and Tinplate Bars.	Wire Rods.
1914	66·6	86·9	—	—	—	—	—
1929	76·7	89·3	9·8	97·6	93·0	56·9	75·2
1931	78·7	93·6	8·8	96·7	95·3	60·7	76·3
1933	82·0	92·8	3·9	98·5	91·0	64·9	78·3

II. United Kingdom.

The chief sources are the Report of the Import Duties Advisory Committee and the statistics published by the British Iron and Steel Federation; the data are by no means complete.

The following are all percentages of the appropriate total outputs.

Year.	Pig Iron made in Integrated [1] Plants over Total Output.	Pig Iron used in same Plant over Output of—	
		Integrated [1] Plants.	Non-integrated Plants.
1929	64·7	69·0	23·7
1931	63·0		
1936	69·9		

[1] *I.e.*, attached to steel works.

Year.	Pig Iron Used and Controlled by Steel-makers over Total Used.			
	All Types.	Open-hearth Acid.	Open-hearth Basic.	Bessemer.
1929 . .	65·4	19·9	72·3	99·4
1931 . .	69·2	24·2	69·0	99·5
1937 . .	70·1	19·1	76·2	100·0

Year.	Billets Used in Same Plant as Made Over Total Made.	Sheet and Tinplate Bars Used in Same Plant Over Total Made.
1929 . . .	79·6	47·9
1931 . . .	77·0	42·7
1937 . . .	74·7	41·1

Note.—The last column is highly misleading, for in the tinplate section a great part of the output is transferred to other plants of the concerns which produce it, and this is not recorded in the figures.

THE SUPPLY OF ENGINEERING LABOUR UNDER BOOM CONDITIONS

EVERY industrial upswing meets with resistance at some stage in the shape of sharply rising costs due to increased demand for certain limited or specific resources. "Bottlenecks" are even more evident when an ordinary trade recovery is accentuated by large Government expenditures, as was the case in this country in 1936–7. Theories designed to set out conditions for the attainment or maintenance of "full employment" tend to overlook the extreme heterogeneity which characterises labour supply. Indeed, dynamic analysis is too often content with the simple notion that labour is a factor composed of homogeneous units, an idea useful only in a first approximation to the theory of wages. Most economists will agree that, in the present state of our knowledge, nothing is more necessary than the framing of new assumptions which can face the test of realistic inquiry. Through the courtesy of the Ministry of Labour we have been allowed access to the records of Employment Exchanges for the purposes of statistical analysis. As independent investigators we would like to make it clear that we take sole responsibility for the use of the data and the conclusions drawn from them.[1]

Our object is to consider certain aspects of the impact of the recent boom on the engineering industry in London. This industry has particular significance since it is affected, more than any other, by the abnormal armament activity; it is here that the problem of supply looms large.[2] Our inquiry is confined to the demands for, and the supplies of, engineering labour which were directed through London Employment Exchanges during the six months from July to December

[1] The inquiry has been conducted under the auspices of the Economic Research Division of the London School of Economics.

[2] Engineering is to be included amongst the more important of London's industries. Of all insured workers engaged in general and electrical engineering and in the motor industry, about 20 per cent. are in the London area, a figure which also represents the proportion which London's insured population bears to that of the country as a whole.

In July 1929, only 3·5 per cent. of the general engineering workers in London were unemployed. The figure reached 14 per cent. in the middle of 1932, but, by the end of 1936, it had fallen to under 3 per cent. The course of unemployment in the London motor industry was very similar.

1936.[1] An attempt is made to measure and interpret the degree of delay involved in supplying various types of workers in response to the demands of entrepreneurs. We do not propose to deal with labour recruitment in relation to changes in the technical structure of the engineering industry, a subject which is strictly germane to the present inquiry but which would raise thorny questions concerning the attitude of employers and workpeople towards "dilution."

I

The records relating to men placed with firms in three sections of the industry—General Engineering, Construction and Repair of Motors and Aircraft, Electrical Engineering—were examined in fifteen Employment Exchanges in London for the period of six months from July to December 1936.[2] The essential technical operations are fairly uniform throughout the industry, and there is no need to distinguish bench fitters or turners employed in a general engineering shop from similar men engaged in the construction of motor-cars. We have, therefore, classified all occupations according to two criteria—branch of production and degree of skill—the details of which are set out in the Appendix.

Of the eight branches of production, three (Motor engine work, Motor coach work, Garage and Repairs) include only occupations specific to Motor and Aircraft Construction, while a fourth (Electrical shop) is similarly restricted to trades followed only in Electrical Engineering. The other branches of production (Tool room, Machine shop, Fitting shop, Miscellaneous) cover occupations common to all sections of the industry. Altogether 1,804 men (excluding the unskilled) were placed with engineering firms through the Exchanges sampled during our period. Of these, 1,309, or 73 per cent., as classified here, were engaged in "common" occupations, while the remaining 495 were specific to the Motors and Aircraft or Electrical sections.

[1] Taking the country as a whole, the Ministry of Labour was responsible for the placing of about 36 per cent. of all workers recruited by the engineering and motor industries in 1936. Cf. *Ministry of Labour, Report for the year* 1936, p. 13.

[2] The areas were selected as containing the most important groups of engineering firms in London. Other areas, notably Dagenham and Dartford, were also investigated, but the types of placings recorded were not suitable for our analysis. General Engineering was examined at the following Exchanges:—Acton, Battersea, Hendon, King's Cross, Shepherd's Bush, Stratford, Tottenham, Willesden and Woolwich (excluding placings at Woolwich Arsenal); Motors and Aircraft at Acton, Hendon, Kingston, Shepherd's Bush and Willesden; Electrical Engineering at Acton, Battersea, Enfield, Hackney, Holloway, Leyton, Tottenham, Willesden, Wood Green and Woolwich (excluding the Arsenal placings).

Alongside this " horizontal " division of occupations according to branch of production, there is the " vertical " classification into four grades of skill—highly skilled, skilled, semi-skilled and unskilled. The last category, comprising mates and general labourers, is not divided according to branch of production. These distinctions of skill are a subject on which the well-informed can reasonably hold divergent views, but, having carefully considered the relevant facts, we put forward our classification as an attempt at summarising the practice of the industry.

The process of filling vacancies normally has three stages; the employer notifies the Exchange of the existence of a vacancy, the Exchange sends one or more applicants, and one of the workers submitted is engaged. Delay can be measured by the total interval (in days) between the date of notification of the vacancy and the day on which the successful applicant starts work; but in this inquiry we have ignored any lags there may have been between the sending of a workman and the day on which he is placed.[1] Three categories of delay are distinguished—non-existent or nominal, short, long. Delay is either absent or purely nominal if an applicant is sent to a job on the day of notification (disregarding the date of starting work) or if he is submitted and placed on the day following the receipt of the order. Cases other than these form a category of real delay; and this is classified as short if the interval from notification to submission is under five days and as long if this interval is five days or more. A long delay thus arises when the employer waits at least a week (of five working days) before the workman he ultimately engages is sent by the Exchange.

The analysis of delay encountered certain difficulties on account of the presence of requests for trainees and of single orders for large numbers of workers. Some of these difficulties proved insuperable, with the result that a number of orders had to be excluded for various reasons.[2] The quantitative effect of this weeding-out is shown in the table.

[1] In computing any interval, we have ignored Saturdays, Sundays and Bank Holidays; and orders received by the Exchanges after 3 p.m. are regarded as belonging to the following day. Allowances were also made for cases where the firms concerned were shut down over holiday periods. If the employer in notifying the vacancy, specifies a day on which he requires the worker to start, then that day has been regarded, for the purpose of computing lags, as the day of notification.

[2] Trainees could not be included because their entry into industry from Government Training Centres is of a special character. As regards large orders, various cases should be noticed. A request for a definite number of men may be followed, before the original submissions are completed, by later demands for

15 Exchanges Sampled.	Highly Skilled.	Skilled.	Semi-Skilled.	Trainees.	Un-skilled.	All.
No. of workers placed	173	815	969	264	703	2,924
No. included in analysis . . .	169	743	892	—	699	2,503

These exclusions detract a little from the value of our results, for we can throw no light on the way in which firms giving standing orders obtain their craftsmen or on the extent to which the supply of trainees meets the demands for partly trained workers.

II

Table I, which differentiates workers according to branch of production, summarises the analysis of delay in placing and also

TABLE I

Engineering Male Workers by Branch of Production. Sample Inquiry, London, July–December 1936.

Branch of Production.	No. of Vacancies.	No. of Submissions	No. of Placings	Per Cent. Placed With—			
				No or Nominal Delay.	Short Delay.	Long Delay:	
		Per 100 Vacancies.				5–9 Days.	10 days and Over.
Tool room . .	160	183	65	33·7	26·9	14·4	25·0
Machine shop .	630	178	68	36·9	32·6	12·7	17·8
Fitting shop .	534	191	74	40·9	38·9	10·1	10·1
Motor engine work	102	211	74	51·3	34·2	10·5	3·9
Motor coach work	314	171	74	56·5	29·7	7·8	6·0
Garage and repairs	228	239	65	56·8	30·4	7·4	5·4
Electrical shop .	66	156	59	38·5	25·6	12·8	23·1
Miscellaneous .	529	199	72	52·5	34·7	6·0	6·8
Unskilled . .	785	176	89	78·4	18·5	1·7	1·4
Total . .	3,348	187	75	54·8	29·3	7·4	8·5

directs attention to the numbers of persons sent and placed, each expressed as a percentage of the number of vacancies notified.

other workers of the same type. Such an order has been split into its component parts, the later requests being dated according to the available evidence. Then, it is possible that an employer's order may not specify a definite number of workers to be sent, it being understood that several men are needed. Orders of this type have been carefully scrutinised and admitted or left out on their merits. From this case we pass to a third, where the employer submits a standing order, informing the Exchange that he is always ready to take men qualified for the work in question. Such orders defy treatment altogether, and they have been left out of the analysis of delay. As the majority of placings at Dagenham and Dartford were of the standing order type, these areas had to be excluded.

The first three branches of production listed include occupations common to all sections of the engineering industry. It is clear that there was considerable difficulty in placing workers in all these branches and that the difficulty was much more marked for vacancies in the Tool room and Machine shop than in the Fitting shop. Fewer men were sent and a smaller proportion of placings was achieved by the Exchanges in the cases of vacancies notified for Tool room and machine workers. Further, long delays in placing were more frequent and more serious among these workers than among men recruited for the Fitting shop. The Tool room is the branch of the industry employing the most highly skilled workers, and the difficulties of recruitment are very severe. It was possible to send 183 applicants for every 100 vacancies notified, but only 65 per cent. of the jobs were filled from amongst the men submitted. Only one-third of all placings involved no or nominal delay, while the interval from notification to submission was at least five days in almost 40 per cent. of the cases. No fewer than one-quarter of the successful applicants were sent ten or more days after the vacancies were notified. The results are somewhat less marked for workers engaged in the Machine shop, which includes many occupations of a semi-skilled nature. In the Fitting shop, the ratio of placings to vacancies is greater, and long delays appeared less frequently. There is, however, an unusually large number of short delays recorded in the placing of these workers.

The branch of production which comprises trades specific to Electrical Engineering also shows noteworthy results. Only 156 men were submitted for each 100 vacancies and the proportion of openings filled was under 60 per cent. The position as regards delay was almost as acute here as in the Tool room; 23 per cent. of all cases of recruitment, for example, involved lags of at least ten days between notification and submission. The situation appears much easier in the three groups of occupations specific to the Motor and Aircraft industry. Except for certain men engaged on coach work, there was a plentiful supply to meet the demands for these types of workers, and large numbers of applicants were sent to firms notifying vacancies. The Exchanges were successful in filling only 65 per cent. of the jobs for garage and repair workers, and it must be assumed that employers had ample outside supplies of labour. There was comparatively little delay in placing workers in the three occupational groups; well over half of the labour was recruited without any genuine delay, and long lags were relatively infrequent, only about 14 per cent. of the

cases involving delays of five days or more between notification and submission.

Looking at the industry from the point of view of the branches of production, we reach the following conclusions. Labour shortage and placing delay are most marked in the recruitment of hands for the Tool room and Machine shop and for specific electrical work. There is a relatively plentiful supply of labour for jobs specific to the construction of motors and aircraft, and engagements are made after moderate time-lags. The same conclusion holds for general miscellaneous workers, concerned mainly with maintenance and stores.

A similar analysis, distinguishing workers according to grade of skill, is set out in Table II. The facts revealed here are of particular interest, since they bear directly on the relation of skill to the problem of labour supply. Taking the figures for all sections of the engineering industry, we find a remarkably steady progression as we pass from the highly skilled to the skilled, semi-skilled and unskilled workers; the proportion of vacancies filled by the Exchanges rises and the amount of delay involved in placing decreases.[1] The complaint, often heard in times of boom, that skilled men are difficult to get finds its justification in these figures, which leave no doubt as to their meaning. Of all vacancies notified for highly skilled workers, only 63 per cent. were filled by the Exchanges in the second half of 1936. About one-third of the placings made involved no real delay while there was long delay in recruitment in almost the same number of cases. The lag between notification and submission was at least ten days in as many as 18 per cent. of all instances of successful placing. For semi-skilled workers, 71 per cent. of all vacancies were filled, half the placings involved no or nominal delay, and long lags, though fairly frequent, were not serious. Further, the Exchanges succeeded in placing unskilled workers in nearly 90 per cent. of all such openings notified and, of the placings, as many as 78 per cent. were made without real delay, while insignificant numbers of long lags were recorded. Less difficulty was experienced in placing

[1] The results in Table II relating to the numbers of submissions are interesting. In the cases of skilled and semi-skilled workers, the Exchanges mobilised nearly twice as many men as there were vacancies. The numbers of submissions of highly skilled and unskilled workers were relatively much smaller. There appear to be two influences operating; where there is scarcity of labour the submission ratio tends to be low and where employers are careful in the selection of men (*e.g.*, for highly skilled work) the ratio tends to be high. The low ratio for highly skilled workers would indicate that scarcity is a more powerful factor than the fastidiousness of employers. The equally low ratio for unskilled men would indicate that firms take less trouble in selecting such workers.

TABLE II

Engineering Male Workers by Grade of Skill. Sample Inquiry, London, July–December 1936.

Grade of Skill.	No. of Vacancies.	No. of Submissions	No. of Placings	Per Cent. Placed With—			
		Per 100 Vacancies.		No or Nominal Delay.	Short Delay.	Long Delay : 5–9 Days.	Long Delay : 10 Days and Over.
All occupations.							
Highly skilled .	269	177	63	34·9	32·0	14·8	18·3
Skilled . .	1,040	190	71	43·6	31·0	11·7	13·7
Semi-skilled .	1,254	195	71	49·4	35·9	7·0	7·7
Unskilled .	785	176	89	78·4	18·5	1·7	1·4
Total .	3,348	187	75	54·8	29·3	7·4	8·5
Occupations Specific to Motors and Aircraft.							
Skilled . .	279	219	72	48·3	30·3	10·9	10·5
Semi-skilled .	344	189	70	63·9	29·5	5·0	1·7

semi-skilled and (to a less extent) skilled workers in occupations specific to motor and aircraft construction than in work common to all sections of the engineering industry.

It is of interest to examine the incidence of placing delay in particular occupations. Since it is not possible to give details for all the occupations listed in the appendix, we have adopted the experiment of grouping together workers engaged in fairly similar tasks. Some results are given in Table III, where nine skilled occupational groups are listed, in addition to improvers (of all kinds) and a group of workers engaged as packers and storehands.

The most striking results are for tool setters and skilled machinists, highly skilled workers in vital branches of production. A markedly small proportion of vacancies were filled and, in 28 per cent. of the cases where placings were effected, the Exchanges sent the successful applicants after lags of at least ten days from the receipt of the orders. This is a clear example of a " bottle-neck " in the supply of labour to the industry in time of boom. Long delays were also frequent in the recruitment of machine workers (often semi-skilled), while many rather shorter lags were found in the placing of turners and fitters. Of the main skilled occupations common to the engineering trades, welders and workers in sheet metal showed up least badly as regards difficulty of placing, though short lags are here very prevalent and long delays are by no means unknown. In general, less delay is ex-

TABLE III

Engineering Male Workers by Occupation. Sample Inquiry, London, July–December 1936.

Occupation.	No. of Vacancies.	No. of Submissions	No. of Placings	Per Cent. Placed With—			
		Per 100 Vacancies.		No or Nominal Delay.	Short Delay.	Long Delay: 5–9 Days.	Long Delay: 10 Days and Over.
Tool setters and skilled Machinists	174	155	56	21·7	33·0	17·5	27·8
Turners	160	167	72	34·0	34·8	15·6	15·6
Fitters	340	197	73	44·0	27·0	15·7	13·3
Machine workers	219	185	67	40·9	30·6	8·8	19·7
Welders and Sheet Metal workers	195	186	71	37·7	42·0	9·4	10·9
Coach builders	92	183	63	36·2	29·3	15·5	19·0
Motor mechanics and Electricians	124	274	75	56·0	27·9	8·6	7·5
Garage hands	136	205	65	58·4	31·5	5·6	4·5
Coach painters	158	163	78	71·8	28·2	—	—
Improvers	362	196	75	47·6	32·9	9·2	10·3
Packers and storeroom	167	220	71	51·3	40·3	4·2	4·2

perienced in supplying workers in specific motor and aircraft occupations. But, considering the fact that 340 motor mechanics and electricians were submitted for 124 jobs, the proportions of unfilled vacancies and of long delays are surprisingly high for these workers. Many of the applicants apparently failed to satisfy the employer's requirements. There is a striking difference between the results for the recruitment of coach builders and coach painters, a difference which shows the existence of another " bottleneck ". Coach builders were engaged only with great difficulty and over a third of the successful applicants were sent five or more days after the vacancies were notified. Coach painters, on the other hand, were placed after practically no delay. Finally we may notice the rather unexpected results for packers and storeroom workers. It might be thought that men could be recruited for this kind of work with relative ease, and many applicants were indeed submitted to the employers notifying vacancies. But the proportion of jobs filled was rather small and a considerable amount of delay (mainly of short type) was experienced in recruitment. It appears that the supply of these workers, though extensive, is rather unsuited to meet the needs of employers.

III

So far we have been concerned with the general picture as revealed by the fifteen Employment Exchanges taken together. It is now necessary to inquire whether there are any important regional variations concealed in the aggregate results. For this purpose, we propose to separate three groups of Exchange areas—the West and North-West (Acton, Hendon, Kingston, Shepherd's Bush and Willesden); the North and North-East (Enfield, Leyton, Stratford, Tottenham and Wood Green); the Central area (Battersea, Hackney, Holloway and King's Cross). In order to bring out the regional factor more clearly, we limit this part of the analysis to occupations common to all engineering trades. The results are presented in Table IV. The relative importance of the areas in the industry is roughly indicated by the numbers of openings notified to the Exchanges, both the North

TABLE IV

Engineering Male Workers (common occupations) by Regions and Grade of Skill. Sample Inquiry, London, July–December 1936.

Region and Grade of Skill.	No. of Vacancies.	No. of Sub-missions	No. of Placings	Per Cent. Placed With—			
				No or Nominal Delay.	Short Delay.	Long Delay :	
		Per 100 Vacancies.				5–9 Days.	10 Days and Over.
West and North-West.							
Highly skilled .	147	184	62	35·2	28·6	13·2	23·1
Skilled . .	480	169	68	40·9	32·6	11·3	15·2
Semi-skilled .	478	181	69	42·6	36·5	7·9	13·1
Unskilled .	286	170	84	75·7	17·6	3·3	3·3
Total .	1,391	175	71	49·3	29·9	8·4	12·4
North and North-East.							
Highly skilled .	43	181	63	33·3	40·8	14·8	11·1
Skilled . .	91	176	79	63·9	27·8	5·6	2·8
Semi-skilled .	176	200	81	46·9	38·5	8·4	6·3
Unskilled .	312	182	94	75·0	24·7	0·3	—
Total .	622	186	86	63·9	29·6	3·9	2·6
Central.							
Highly skilled .	20	220	75	46·7	20·0	13·3	20·0
Skilled . .	130	216	74	32·3	28·1	20·8	18·8
Semi-skilled .	200	224	71	47·9	40·2	7·0	4·9
Unskilled .	69	200	86	86·5	8·5	3·4	1·7
Total .	419	217	74	50·3	29·5	10·9	9·3

and North-East region and the Central area showing under half the number of vacancies found in the West and North-West. Further, skilled and highly skilled workers are largely recruited in the West and North-West, while the less skilled and semi-skilled hands form the largest groups in the Central area with unskilled men predominating in the North and North-East.

The regional divergences shown by the indices of delay are illuminating. It can be said that the greatest difficulty in recruitment was found in the West and North-West region; this is true of all workers together and also, in general, of the separate grades of skill. The proportions of jobs unfilled and of long placing delays were higher in this area than in the others. Even amongst unskilled workers, there were some lengthy lags between notification and submission of successful applicants. The results for the Central area are striking. Many men were sent for all grades of skilled and semi-skilled jobs and yet the proportion of posts filled was unexpectedly low. Further, there was an unusually large amount of delay involved in placing skilled men, even more delay than was experienced in the West and North-West region for the similar group of vacancies. Comparatively little difficulty was found, however, in the recruitment of semi-skilled workers. It would appear that the Exchanges in the Central area have considerable numbers of available workers, but, in the case of skilled men, the supply is not well suited to meet the demands of employers, who can obtain the hands they need only after rejecting many of the applicants sent to them. The recruitment of labour would seem to proceed most smoothly in the North and North-East region which shows the highest proportion of vacancies filled and, in general, the least delay in placing. Relatively little trouble was involved in the engagement of many skilled workers and, in fact, it appears that semi-skilled men were less easy to obtain than skilled. This must be due, in part, to the fact that the demands of firms in this area were mainly for the less skilled operatives. Over half of all vacancies notified were for unskilled workers and, though lags of a few days were not infrequent, the supply of men was sufficient to eliminate practically all long delay in placing.

IV

Having measured placing delay, we now proceed to the task of interpretation. We attempt to obtain quantitative estimates of the parts played by different factors in bringing about long delay in the recruitment of workers. Each recorded case of long delay

(*i.e.*, at least five days between the notification of the vacancy and the sending of the successful applicant) can be allocated to one of three categories according as (i) a worker was sent during the first four days after the receipt of the order but was not engaged or failed to start work, (ii) the first submission of an applicant (whether engaged or not) was between five and nine days after notification of the vacancy or (iii) the first man was sent after a lapse of at least ten days. In cases of the first type, it can be assumed that the available labour was not suitable to the employer.[1] The other categories correspond to situations in which there was at least a temporary shortage of men to be sent, and they can be described respectively as moderate and serious scarcity of labour. Table V shows the numbers of cases in the three categories for workers in different branches of production and of various grades of skill.

TABLE V

Factors effecting Long Placing Delay, Engineering Male Workers. Sample Inquiry, London, July–December 1936.

Branch of Production and Grade of Skill.	No. of Placings With Long Delay.								
	Total.	No. Associated With:			No. Attributed to:				
		Unsuitability.	Moderate Scarcity.	Serious Scarcity.	Special Qualifications.	Low Wages.	Hours and Conditions.	Outside Recruitments.	No Details.
Tool room	41	25	6	10	16	6	2	2	15
Machine shop	130	51	33	46	44	16	11	5	54
Fitting shop	80	46	25	9	13	9	5	16	37
Motor engine work	11	7	2	2	8	—	—	—	3
Motor coach work	32	13	14	5	5	7	—	2	18
Garage and repairs	19	16	1	2	7	5	1	—	6
Electrical shop	14	5	3	6	4	2	—	—	8
Miscellaneous	49	25	15	9	14	5	5	—	25
Highly skilled	56	29	13	14	25	7	2	2	20
Skilled	189	83	54	52	64	16	5	17	87
Semi-skilled	131	76	32	23	22	27	17	6	59
Unskilled	22	22	—	—	4	2	11	1	4
Total	398	210	99	89	115	52	35	26	170

Placing delays were most frequent in recruitment for the Tool room and for the Electrical and Machine shops. Table V indicates that moderate and (particularly) serious scarcity characterises the labour supply for the latter two branches of production, unsuitability of applicants being a relatively minor factor. In 35 per cent. of all delayed placings in the Machine shop, no appli-

[1] In very few instances did the worker refuse to accept the job offered or fail to report for work after engagement.

cant at all was sent until at least a fortnight after the receipt of the order. The position is different in the placing of men in the highly skilled jobs in the Tool room, and many of the long delays here followed the submission of unsuccessful applicants during the first few days. It appears that the Exchanges were able to send men for such posts, but the applicants were often rejected by the employers (*e.g.*, as being insufficiently skilled). The placing delays seem to be due to an acute shortage of *fully qualified* workers. Much the same conclusion is reached in comparing the results for skilled and for highly skilled operatives; skilled men can be submitted for jobs requiring greater skill than they possess, often without hope of engagement.

Relatively fewer delays were recorded in placing workers in miscellaneous occupations and in posts specific to motor and aircraft production. Of the delays occurring, the majority can be attributed to unsuitability of the workmen submitted in the first few days, as is shown by the figures of Table V. Almost all the garage hands delayed in placing were sent after applicants had been rejected. On the other hand, there was a great scarcity of coach builders and of certain workers in the miscellaneous group. Scarcity of applicants is, of course, a negligible factor in the placing delays for unskilled workers. In the industry as a whole, about 53 per cent. of all cases of long placing delay can be attributed to unsuitability of labour supply and the remainder to scarcity of possible applicants for the jobs.

In a more minute scrutiny of the factors ultimately responsible for placing delay, we can distinguish the following influences—the specification by the employer of particular qualifications, the offer of wages less than the normal or standard rate, unfavourable hours or conditions of work and the need for recruitment of workers from a distance. Instances of long delay in placing have been allocated to one or other of four classes according to which influence, of those named, seemed dominant in the circumstances,[1] while cases where particulars were lacking have been relegated to a residual category. The results of the analysis are set out in Table V, from which it is seen that details on factors affecting placing delay were available in nearly 60 per cent. of all cases.

It is clear that the most important factor making for delay is concerned with definite stipulations made by an employer as to the quality of worker required. This arises not only from the com-

[1] The allocation between the four groups was based entirely on information obtained from the records of placing, and the element of judgment on the part of the investigator has been reduced to a minimum.

plex and varied nature of the processes but also from the fact, often overlooked, that certain firms are apt to favour methods of working which are peculiar to themselves. This factor is of increasing force as we pass from the unskilled and semi-skilled to the more highly skilled workers and it is to be seen at work most strongly in recruitment for the Tool room and Machine shop. In many instances, employers offered wage rates higher than the standard in an endeavour to attract workers with definite qualifications. As examples of the types of demands which proved difficult to satisfy, we may note press tool makers, setter-operators for automatic machines, universal grinders, turners used to 18-in. lathes, experienced capstan hands and electrical fitters with specialist knowledge, for instance, of transformers. Further, of the relatively few cases of delay in engaging men for motor-engine work, nearly all were for specially qualified fitters and mechanics.

Offers of unfavourable wages, hours and conditions of work were also strong influences leading to placing delay. These factors were found operating in all branches of production and for all grades of skill, but particularly in respect of vacancies notified for semi-skilled workers, *e.g.*, in the Machine shop. In one area press operators were asked for at 9*d.* an hour, and an optimistic employer hoped to get capstan hands at 8*d.* an hour. Several lags were associated with night work and insufficient compensation; some young labourers, for example, were required to work at night at 10*d.* an hour. The influence of long-distance recruitment upon the extent of placing delay was marked for certain skilled groups, mainly in the Fitting shop. The delays associated with unfavourable wages and hours and with long-distance recruitment were usually of moderate length, whereas those arising out of special qualifications or insufficient wages for skilled workers were often considerably longer.

V

Our analysis of labour supply has, of necessity, been confined to that part of the recruitment which was effected through Employment Exchanges. Since fewer than two of every five engineering vacancies are filled in this way, it is clear that employers have numerous other methods of engaging labour. Some firms have always preferred to negotiate for skilled men direct with trade-union officials, believing that, in this way, they can be more certain of the quality of workmen they receive and can have their requirements met more easily in times of boom. Other employers rely more on personal approaches to individual workers or on advertisements in trade journals. Without making a special survey, we can say nothing definite about these various ex-

pedients. There are probably certain firms consistently refusing to use the facilities of the Ministry of Labour, in spite of the fact that the service costs them nothing directly. Apart from this minority, it is safe to say that, if great difficulty is experienced in satisfying orders received by Employment Exchanges, the same must also be true of a large part of the recruitment through other channels. Were this not so, we should expect to see a tendency for many employers to give up using the Exchanges; actually, however, the proportion of the total vacancies handled by the Ministry has been on the increase. We are confident that the part of the field covered by the present inquiry is sufficiently large and representative to warrant certain conclusions about the way in which the diverse demands of employers are met during an industrial upswing. The recent recovery came to an end in the latter part of 1937, and we can fairly regard the second half of 1936 as a period in which the boom was in full swing.

The main fact emerging from our analysis is that acute shortage and long delays were evident in the recruitment of the more skilled operatives, particularly for the Tool room and Machine shop. Nor was it possible to supply many of the less skilled workers without moderate lags, especially when low wages or unfavourable conditions of work were offered. On the other hand, it was comparatively easy to find coach painters, motor mechanics, garage hands, packers and storekeepers, though even here the available applicants were not infrequently below the standards set by employers.

Scarcity was most acute in the West and North-West sector of London, as typified by the area covered by the Acton, Shepherd's Bush and Willesden Exchanges. Great efforts were made here to augment the local supply of skilled labour. We carried out an analysis of the mobility of engineering workers which shows that, in this region, 29 per cent. of all men (including trainees) placed in the industry were recruited from beyond the neighbouring ring of Exchange areas, while 17 per cent. came from Divisions other than London. Further, persons from the depressed areas who had taken courses in Government Training Centres comprised no less than 16 per cent. of all engineering operatives placed in jobs of varying grades of skill in the area under consideration.[1]

It is natural to ask whether the present scarcity of skilled labour is to be attributed to a deficiency in the numbers of young men apprenticed to engineering occupations in a past period.

[1] 1,050 men classed as highly skilled, skilled or semi-skilled were placed in the Acton, Shepherd's Bush, Willesden area. Of these, 171 were trainees.

In the inquiry into Apprenticeship and Training (1925–6), the Ministry of Labour calculated the ratios of journeymen to apprentices necessary to maintain constancy, or to ensure certain rates of annual increase, in the numbers of skilled workers in various occupations. The following table shows the number of journeymen per trainee sufficient to maintain an annual variation in the number of journeymen of the percentage amount indicated :[1]

Occupation.	Annual Variation in Number of Journeymen of :					
	− 2%.	− 1%.	0.	+ 1%.	+ 2%.	+ 5%.
Patternmakers .	5·7	4·3	3·5	2·9	2·5	1·8
Electricians . .	5·6	4·3	3·5	3·0	2·6	1·9
Fitters, Erectors .	6·2	4·6	3·7	3·1	2·6	1·9
Moulders . .	7·4	5·1	4·0	3·3	2·8	1·9
Turners, Machine Tool workers . .	7·5	5·2	4·0	3·3	2·8	1·9

The conclusion reached on the basis of the situation in 1925–6 was as follows. " Subject to the inevitable limitations governing these calculations . . . it would appear that, if recruitment to the skilled occupations takes place only through a recognised system of apprenticeship or learnership, the ratios ascertained during the enquiry, while sufficient to produce a small annual increase (probably about 1 per cent.) in the number of journeymen . . . electricians, turners and machine tool workers, and a slightly greater increase among patternmakers, are barely sufficient to maintain the existing number of journeymen fitters and may result in an actual diminution in the number of journeymen moulders." [2] The recent increase in demand for skilled engineering operatives has exceeded all the expectations of ten years ago; indeed, when the industry was in the grip of the post-war depression, there was little incentive for parents to apprentice their sons to engineering trades. But it cannot be denied that the scarcity of highly trained men would not now be so acute if greater efforts had been made to put new life into the apprenticeship system.[3]

[1] *Report of an Enquiry into Apprenticeship and Training*, 1925–6, General Report, 1928, pp. 48–52.

[2] *Ibid.*, pp. 52–3.

[3] It is significant that one of the earliest Decrees under the German Four Year Plan dealt with apprenticeship. The Law of 7th November, 1936, " to provide for an increase in the supply of skilled workers," required every firm (employing ten persons or more) in the iron, metal and building industries to furnish evidence that the number of apprentices it employed was an adequate proportion of its total of skilled workpeople. The right to decide the " adequate percentage " in each case was vested in the Ministry of Labour authorities. (*Deutscher Reichs- und Preussischer Staatsanzeiger*, No. 262, 9th November, 1936.)

This study brings out clearly the extreme heterogeneity which is a feature both of the demands of employers and of the different grades of the labour supply. There is often a marked lack of correspondence between the precise labour requirements of firms and the types of workpeople available; among the latter there may be many middle-aged operatives with long experience in heavy engineering who find it difficult to adapt themselves to the lighter processes. There is no force in the argument that, because engineers are to be found registered as unemployed, there must be a slack to be taken up in this market. The demand for engineering labour is not a simple and straightforward quantity; it is of varied and ever-changing pattern. Unless the quality of the supply can be readily adapted, there will be unemployment irrespective of the amount of the supply. Recently, the burden of the engineering industry has been aggravated by the re-armament programme which raises in an acute form the problem of prompt execution of orders. Given the assumption that the immediate end is the attainment of decisive armed strength, there is a strong case for granting priority to armament demands for engineering workers. A chaotic scramble for the limited supplies of highly skilled men is not compatible with the effective and early realisation of that end.

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APPENDIX

Classification of Occupations, Engineering Male Workers.

Branch of Production.	Grade of Skill:		
	Highly Skilled.	Skilled.	Semi-Skilled.
Tool Room.	Tool and Press Tool Makers; Die Sinkers; Toolroom Fitters, Turners and Grinders.	Tool Hardeners; Cutter Grinders.	Improvers.
Machine Shop.	Tool and Press Tool Setters.	Turners; Universal Millers and Grinders; Slotters; Borers and Drillers; Setter-Operators.	Horiz. and Vert. Millers; Plain Grinders; Drillers (Jigs); Press and Automatic Machine Operators; Metal Platers and Polishers; Improvers.
Fitting Shop.	Bench Fitters (highly skilled).	Other Bench Fitters; Welders; Sheet Metal Workers.	Solderers and Riveters; Assemblers; Spot Welders; Improvers.
Motor Engine Work.	Engine Fitters and Testers.	Engine Erectors; Motor Mechanics and Electricians.	Assemblers; Improvers.
Motor Coach Work.		Coach Builders and Painters; Panel Beaters.	Brush Hands; Flatters, Sprayers and Rubbers; Improvers.
Garage and Repairs.		Garage Mechanics.	Garage Hands.
Electrical Shop.	Electrical Scientific Instrument Makers.	Dynamo and Electr. Fitters; Armature Winders; Armature, Core and Commutator Builders; Switch Board Makers.	Coil Winders; Wire Coverers; Assemblers; Improvers.
Miscellaneous (including Foundry and Maintenance).	Millwrights; Maintenance Fitters and Engineers.	Pattern Makers; Moulders; Smiths; Skilled Examiners and Testers; Building Craftsmen; Pipe Fitters; General Electricians.	Other Examiners and Testers; Beltmen; Furnacemen; Firemen and Stokers; Builders Handymen; Packers; Storekeepers.

Unskilled Workers: All Labourers and Mates to Skilled Workers.

SIZE OF FIRMS IN THE BOOT AND SHOE INDUSTRY

FIRMS in Great Britain manufacturing boots and shoes vary greatly in size. The size analysis, based on "returns" under the Census of Production, relates more closely to "plants" than to "firms." This analysis is given in Table I.

TABLE I

Size Distribution of Shoe Manufacturing Plants in 1930 [1]

Size of Plants. Criterion: Employees.	10–50.	50–100.	100–200.	200–300.	300–500.	500–750.	750 and over.
Percentage of plants, 1,057 = 100% .	48%	21%	15%	7·2%	5·3%	1·6%	1·9%
Percentage of employees, 121,311 = 100% . .	10%	13%	19%	14%	18%	8%	18%

First-hand inquiries made in the industry show that of the plants with less than 300 employees, thirty-two belonged to sixteen firms, each owning two plants. Of the thirty-seven plants with more than 500 employees, control lay with twenty-five firms. In all other size groups "returns" corresponded to firms. Thus, although the Census classification may somewhat under-state the importance of firms with over 300, and particularly those with over 750 employees, it seems that the "size structure of firms" does not differ appreciably from the "size structure of plants." [2] It is intended in this paper to account for the survival of small and medium-sized firms alongside a few very large firms in the industry.

A firm is considered to consist of a managerial, technical, financial, and commercial (buying and selling) sector. Each sector reaches its most efficient size at a scale of operation which does not necessarily coincide with that of another sector. Hence the "optimum size" of the firm is determined at the point at which economies arising from expansion in some sectors are being outweighed by an increase in costs in other sectors. The influence

[1] Census of Production, 1930, Part I, p. 408. Figures for 1935 are not as yet available.

[2] Employees, local and central secretaries of Manufacturers' Federations and Trade Unions assisted in determining the number of firms in the industry.

exercised by each sector on the optimum of the firm will be discussed, and account will be taken of market conditions which induce entrepreneurs to abstain from expanding towards that optimum.

§ 1. *Managerial Sector*

To co-ordinate the various sectors of the firm, to decide what is to be produced and what policy, in competition with other firms, is best to be pursued are the tasks of persons engaged in this sector. Mr. Robinson maintains [1] that management is, from the point of view of the individual firm, a scarce factor, that the number of persons ultimately responsible for making decisions with regard to the firm's organisation and policy cannot be increased, and that consequently a decline in managerial efficiency sets an "upper limit" to the size expansion of firms. Even assuming that the supreme co-ordinating authority could with success delegate powers to sub-managers, that "incentives" [2] were devised which would encourage managers to render the utmost possible service, addition to unit costs incurred for managers and "clerical staff to assist them" [3] would at some point exceed the declining costs per unit of output in all other sectors.

With regard to industry as a whole, Census figures which, in post-war years, show a relatively greater increase in management over operative personnel, seem to prove that more firms have tended towards their managerial optima.[4] Concerning the shoe industry, Table II indicates a reduction in administrative, clerical, and technical staff as well as a reduction in operative workers over the last four Census years, so that the ratio of operatives per administrative person remains fairly constant. An independent inquiry into thirty-two firms, eighteen of which employed just under 300 persons, eight just under 500, and six more than 750 persons, does, however, show ratios of 13.9, 13.1, and 11.3, respectively, for various size groups. It would appear that management personnel increases with increasing sizes of

[1] E. A. G. Robinson, "The Problem of Management and the Size of Firms," ECONOMIC JOURNAL, September 1934, pp. 255–6 (see also N. Kaldor, "The Equilibrium of the Firm," *ibid.*, March, 1934).

[2] P. S. Florence, "The Problem of Management and the Size of Firms—A Reply," ECONOMIC JOURNAL, December 1934, p. 726.

[3] E. A. G. Robinson, *loc. cit.*, p. 255.

[4] Robinson points out that, while for industry as a whole "operative workers increased between 1907 and 1924 by only 10 per cent., administrative, technical, and clerical staff increased by some 60 per cent." (*loc. cit.*, p. 256).

TABLE II

Employment in the Shoe Industry

Census Year.	Operative Workers.		Administrative Staff.		Total Employed.		Ratio of Operatives to Administrative Staff.
	Total, 000.	Increase or Decrease on Previous Date, %.	Total, 000.	Increase or Decrease on Previous Date, %.	Total, 000.	Increase or Decrease on Previous Date, %.	
1907	117·5	—	9·2	—	126·8	—	12·8
1924	121·3	+ 3·2	9·2	—	130·5	+ 2·9	13·2
1930	112·9	− 6·9	8·8	− 4·3	121·7	− 6·7	12·8
1935	112·4	− 0·4	8·5	− 3·4	120·9	− 0·7	13·2

firms. Unfortunately, both the Census and the sample term of "administrative" staff includes foremen, designers, warehousemen and buying and selling agents, who should properly be allocated to other than the managerial sector. The difficulty of separating management staff from salaried personnel in other sectors makes impossible a statistical verification of Robinson's contention that managerial costs rise with the size of firms.

To the extent that managerial efficiency depends on the frequency of decisions to be made with regard to the intensity of demand changes for various qualities and designs of shoes, the optimum size of this sector will vary from firm to firm, according to the type of shoe produced by different firms. Hence a knowledge of the degree of change involved in the demand for various types of shoes is essential before the managerial optimum can be determined.

§ 2. *Financial Sector*

Financial resources must be available to give a firm a proper start. But can we assume that the cost of financing has been an impediment to the size expansion of the majority of small firms in the industry? If the management decided on expansion, the rate of growth of a firm would depend on its accumulation of profits, earned in previous years, on the terms at which it could borrow working capital from banks, merchants, and private individuals, and on its power to induce investors to subscribe to new capital issues.

In the industry the view is held, firstly, that in regard to the supply of working capital, large firms are generally charged with lower rates of interest than small firms. Secondly, as large firms usually cope with a greater number of orders placed at different

periods, they can partly finance current expenditure on some new orders by incoming sales receipts for earlier orders. Both the lower rates of interest, as well as the smaller working capital requirements, result in cost advantages to the larger manufacturer.

There is reason to assume that firms which started on a relatively large scale could borrow more readily than small firms. In fact, of the twenty-five firms with more than 500 employees to-day, twelve were among the leading firms in the industry in the second half of the nineteenth century. Of the remaining thirteen, only five grew from relative insignificance at that time into the highest size group to-day. The other eight firms were the creation of multiple shoe retailers, who by integrating a number of small manufacturers made the formation of large-scale firms financially possible. Of these twenty-five firms, ten embarked on wide capital extensions only after they had been transformed from private concerns into public companies. Such transformation took place between 1876 and 1900 in the case of four, between 1900 and 1918 in the case of five, and since the war in the case of one firm.[1]

The larger the firm, the greater are the economies to be reaped in this sector. If, despite this incentive to expand, the majority of firms have remained of small and medium size, explanation must be sought in technical and commercial considerations rather than in the checking influence of the financial costs of growth.[2]

§ 3. *Technical Sector*

Mass manufacture of shoes as opposed to bespoke shoe-making developed gradually in the first half of the nineteenth century. None but hand-sewing and wood-pegging machines were being used at that time. Real progress in division of labour, in the invention and utilisation of technical equipment,[3] and in the

[1] *The Stock Exchange Official Year-Books.*

[2] Little is known about growth, survival, and decline of firms during pre-war years. Of 110 firms enumerated in 1885 in the *Northampton Town Directory* only twelve have survived, of which seven employ more than 500 persons. In 1879 "The Northampton Town Manufacturers Association" counted 200 firms in Northampton, as against sixty in 1936. No comparable information could be obtained for other shoe centres.

[3] It was said that 150 pairs of shoes per man per day could be manufactured, as compared with twenty-five pairs per day, by using the improved Blake chain-stitch sewing-machine. The introduction of lasting-machines resulted in savings of half the time formerly necessary to hand-lasting. When by 1890 the "new consolidation hand-method lasting-machine" found wide application, it was said that it could do the work of five or six men at less than the corresponding labour costs. The Goodyear welt-sewer installed in 1889 by a firm in Kilmarnock could do the work of a man in eighteen seconds which formerly took him more

subsequent rise of a British shoe-machinery industry dated from after 1850. To complete a pair of shoes, the services of nine to sixteen employees were required in 1850, as against thirty to forty in 1900 and forty to fifty employees in post-war years. Shoe-machine firms in Great Britain increased from four in 1853 to twenty-four in 1896. By 1898 most manufacturing plants included in their machine park " revolution presses, sole moulders, perforating, beading, eyeletting and hooking, riveting, slugging and levelling, heel attaching, edge trimming and sewing machines." [1] In fact, most operations had become mechanised by the end of the century.[2]

What were the effects of these pre-1900 changes on the size of manufacturing plants? With increased mechanisation the real problem in determining the optimum size of plants was to find the " balance of processes," [3] that is, the most economical co-ordination of various machines with different technical capacities. The following hypothetical example illustrates that

TABLE III

Mechanical " Team " Co-ordination

Machines Available for Shoe Manufacture.	No.	Output Capacity Pairs of Shoes	To Obtain Complete Mechanical Co-ordination :	
			No. of Machines Needed.	Optimum Output of Pairs of Shoes.
Finishing . . .	1	90	56	5,040
Edge-trimming . .	1	80	63	5,040
Eyeletting . .	1	70	72	5,040
Rivetting . . .	1	60	84	5,040
Lasting . . .	1	20	252	5,040

a plant which made use of a single machine for each individual operation would, at a daily output of seventy pairs, under-employ two, and over-employ two other machines, and would

than an hour to execute. The substitution of the hand welt-sewer in 1899 by improved welt and turnshoe machines resulted in an output of twelve pairs instead of one pair, at the cost of 9*d.* for this operation. The Rex pulling-over machine, which came into use only after 1900, reduced the cost of this operation by more than 65 per cent. See Ernest Bordoli, *Footwear Down the Ages*, 1935, pp. 33–48.

[1] Ernest Bordoli, *There is Nothing like Leather*, 1937, p. 22.

[2] A. Marshall, referring to American conditions, pointed out that the pre-1900 phase was a period " of brilliant mechanical inventions which reduced the direct labour cost of a boot to less than a tenth of what it had been and hand labour practically ceased from the industry "—see *Industry and Trade*, 1927, p. 233.

[3] E. A. G. Robinson, *Structure of Competitive Industry*, 1937, pp. 32–4.

thus incur diseconomies. To achieve a perfect balance between different processes, the multiplication of individual machines would be necessary. Such co-ordination of machines, constituting a "team," would be obtained by a plant with a daily output of 5,040 pairs. Hence the size of a team would determine the optimum size of a plant.

But the size of the team depends on the degree to which hand operations are being substituted by machines, and on the technical capacities of machines. In pre-1900 days machine utilisation increased, and competition, amongst an increasing number of machine producers, was based on varying the output capacities of machines rather than on price. Thus competitive conditions of machine supply, with no attempt on the part of machine firms to co-ordinate technical capacities, made large-scale manufacturing plants necessary, in order to derive the maximum economies from balanced "team" utilisation.

Intense competition between the machine-firms led to the formation in 1899 of the "British United Shoe Machinery Company, Ltd." [1] which amalgamated a great number of these firms. The B.U.S.M.C. introduced a system of not selling their machines outright, but of leasing them. To secure a sales market, the Company acquired the patent rights of a few very important machines. These "key machines" could be leased only on condition that manufacturers would make use of other B.U.S.M.C. machines as well, for which the Company, in fact, did not possess the protection of patent rights. This latter system has become known as the "tied leasing arrangement." [2] By means of "tied leasing," the B.U.S.M.C. forced other machine-firms sooner or later to close down or to seek absorption with the Company, which continuously increased its sphere of influence. In 1910 the share of machinery running in the British shoe industry acquired from companies other than the B.U.S.M.C. was estimated at about 20 per cent.[3] In 1936 [4] the B.U.S.M.C. controlled more than 90 per cent. of the machines used by British shoe manufacturers, as against 68 per cent. in 1900.

[1] J. H. Clapham remarks that this British United Shoe Machinery Company, Ltd.—henceforth to be denoted by B.U.S.M.C., "though half English in capital and management, had its centre of will-power—the voting which goes with the control of ordinary stock—in the United States," *An Economic History of Modern Britain*, Cambridge, 1938, p. 38.

[2] Richard Roe, "The United Shoe Machinery Company," *Journal of Political Economy*, Vols. XX–XXII.

[3] Shoe and Leather Trade in the United Kingdom, Special Agents Series, No. 49. U.S.A. Department of Commerce and Labour, 1912, p. 8.

[4] Ernest Bordoli, *Footwear Down the Ages*, 1935, p. 57.

Both the dominating control over machine production and the lease policy pursued by the Company had decisive effects on the size of manufacturing plants. Firstly, the Company was able to produce machines with well-balanced output capacities, making up a "team," which was smaller than that required in pre-1900 days. Secondly, royalties on leased machinery were assessed at a fixed sum per 1,000 turns performed by each machine. Consequently royalty payments varied directly in proportion to variations in the use of machinery. Whether a plant consisted of forty or 400 machines, the machine costs per pair of shoes were the same for both sizes of plant. Thus the B.U.S.M.C.'s royalty policy prevented large-size plants from reaping economies by spreading machine cost over a larger output, and "despite serious pressure from largest manufacturers to introduce a sliding scale of royalties in accordance with the greater or less use of machines, the Company has never swerved from standard uniform prices." [1]

Whilst in pre-1900 days competition among machine firms made for large-scale manufacturing plants, in order to reap technical economies from balanced machine co-ordination, monopolistic supply of machines encouraged in post-1900 years the growth of small-scale plants, which for technical reasons were at no disadvantage as compared with large-scale plants.[2] For (*a*) the "teams" were much smaller, (*b*) the peculiar determination of "royalties" eliminated economies, arising from the use of machinery, and (*c*) the "leasing" arrangement made it unusually easy for manufacturers to enter the industry.[3]

It was found that equipment would be best utilised and division of labour would, under prevailing conditions of technique, be carried to the limit at a size of plant employing approximately fifty to sixty workers, when engaged in men's medium quality of shoes, or forty to fifty workers in the ladies' branch of production. At this scale of operation costs per pair of shoes incurred in this sector would be lowest, direct labour costs amounting to 23–25 per cent., royalty charges to 2–3 per cent., and other overheads to 4–5 per cent. of total manufacturing costs.[4] Prior to this

[1] Malcolm Keir, *Manufacturing*, 1928, Vol. I, pp. 460–1.

[2] This policy of the B.U.S.M.C. has never been fundamentally altered, although a fixed annual charge per machine was introduced, supplementing the variable monthly royalties, and although a large number of secondary rather than primary machines are to-day being sold instead of being leased.

[3] Hoover, *Location Theory and the Shoe and Leather Industries*, 1937, p. 204.

[4] For cost analysis of thirty-five shoe firms see: (1) Committee on Industry and Trade: *Further Factors in Industrial and Commercial Efficiency*, H.M.S.O. 1928, p. 149, and (2) *Financial Times*: *Footwear Profits*, 20, II, 1939.

minimum scale of operation economies would certainly increase, but exceeding it a mere multiplication of technical teams would neither reduce nor necessarily increase technical costs [1] per pair of shoes.

§ 4. *Buying Sector*

Expenditure on sole and upper leather is the most important cost item in the manufacture of a pair of shoes. It varies according to the quality of leather used, between 50 and 60 per cent. of total manufacturing costs.[2] Since leather is made from hides, and since hides are a by-product of animal raising, and since the meat of an animal is worth about ten to fifteen times the hide,[3] the price and supply of hides are regulated by factors relating to meat rather than to leather consumption. Thus, unlike wheat, tin, rubber, and raw cotton, the supply of leather is but little influenced by the price of leather. Prices for heavy leathers follow hide price-movements with a time lag of roughly four to six months [4] as against eight to ten months in pre-war days. Hide prices fluctuate heavily, and the formation of the New York Hide Exchange in 1929 has so far not succeeded in smoothing out price fluctuations by future trading.[5] The post-war price movements of three out of some 100 different qualities and grades of leather are shown in Table IV.

Cheap buying of leather depends on at least four factors: (*a*) Since inter-annual prices fluctuate by as much as 25–50 per cent. for dressing hides and by more than 100 per cent. for sole bends, great skill and foresight on the part of buying agents are required in contracting purchases, advantageous to the firm in the light of future prices. They must be in close touch with tanners in order to participate in sudden stock clearings at low prices. In so far as the agents of large firms concentrate on special markets, they are likely to be more successful in their purchases than those of smaller firms. (*b*) Tanners and leather-dealers usually quote a price, and individual bargaining with manu-

[1] Labour cost and royalties only. For although economies might in some instances accrue from expansion on the third item, "other overhead," these are not considerable.

[2] Committee on Industry and Trade, *loc. cit.*; *Financial Times, loc. cit.*

[3] E. C. Snow, "Trade Forecasting and Prices," *Journal of Royal Statistical Society*, May 1923.

[4] This time-lag is accounted for by the duration of tanning hides into sole leather. Mechanisation in upper-leather manufacture has made it possible to tan goatskin into glace kid within a few days.

[5] G. R. White, "Some Statistical Aspects of Future Trading on a Commodity Exchange," *Journal of Royal Statistical Society*, Vol. XCIX, Part II, 1936.

TABLE IV

Inter-annual Leather Price Variations [a] *and Index of Average Prices* [b]

Year.	Sole Bends.		Bark-Tanned Soles.		Dressing Hides.	
	s. d. per lb.	1924 = 100%.	*s. d.* per lb.	1924 = 100%.	*s. d.* per lb.	1924 = 100%.
1924	1/2–2/6	100	2/6–3/3	100	1/6–2/0	100
1925	1/3–2/9	106·7	2/6–3/3	101·5	1/8–2/2	108
1926	1/1–2/6	100	2/3–3/6	95·5	1/6–2/4	105·8
1927	1/3–2/9	116·7	2/6–4/0	113·4	1/8–2/6	114
1928	2/0–3/0	131·1	3/0–4/4	128·4	2/2–3/0	148·8
1929	1/2–2/6	100	2/6–3/6	104·5	1/6–2/4	102·3
1930	1/3–2/6	95·6	2/6–3/9	107·5	1/6–1/10	90·7
1931	1/2–2/6	97·8	2/3–3/2	95·5	1/2–1/8	77·9
1932	10½–2/6	82·2	1/9–3/2	89·6	1/0–1/8	*74·4*
1933	9½–1/8½	73·3	1/9–3/2	*89·6*	1/0–1/9	77·9
1934	10–2/0	71·1	2/0–3/2	90·3	1/2–2/0	84·9
1935	9–2/2	*71·1*	2/0–3/6	98·5	1/1–1/9	79·1
1936	1/1½–2/5	96·7	2/3–3/8	105·2	1/4–2/0	91·9
1937	1/2–2/7	102·2	2/5–3/8	109	1/4–2/2	96·5
1938	1/0–2/2	80	2/0–3/4	92·5	1/0–1/10	81·4

[a] Lowest and highest price; Source: *Economist* Wholesale Prices.
[b] Annual average of weekly quotations, 1924 = 100.

facturers leads to the contract price.[1] The deviation of contract from quoted price depends to some extent on the bargaining skill of agents, but primarily on the size of the buying order. In this respect large firms reap economies over small firms; but small firms can also reap these economies by placing large orders on conditions of delivery of small parcels each month. (*c*) By spreading agents' remunerations over bigger order, large manufacturers enjoy some further cost advantage. Finally, (*d*) manufacturers who pay cash on contract price within 7 days usually obtain a discount of 6½ per cent. from a tanner and 3¾ per cent. from a leather dealer, as against 3½ per cent. and 2½ per cent. respectively, for payment within 30 days. Granted equal borrowing facilities, both large and small manufacturers are likely to make use of these customary conditions of payment, although the gains are slightly higher for manufacturers who deal directly with tanners. Thus, in the buying of leather, all the above-mentioned factors point to economies,[2] which accrue to large-scale manufacturers.

[1] The quoted price usually includes transport charges, reckoned at ⅛ of a penny per ton mile by rail.

[2] These economies are, of course, partly offset by increasing costs of stock-holding. However, no information could be obtained on the importance of this item, except that following the decline in materials prices during 1929–33, manufacturers have been very reluctant to purchase on stock in subsequent years.

It is impossible to say definitely at what size of firm leather purchases are being most advantageously concluded. For whenever tanners sell " remainders " or otherwise wish to clear their stock, small quantities may be bought very cheaply. Some manufacturers hold, however, that price concessions would normally be exhausted at purchases round about 1,200 skins (per 5 square feet) and 600 bends of sole leather (per 14 lb.). Assuming that exceeding these quantities economies cannot be increased, it would follow that the optimum size of this buying sector corresponds to a size of firm employing between 120 and 450 workers. For these quantities would be consumed in the manufacture of roughly 7,500 pairs of shoes, which could be produced within a week by 450 workers and within a month by 120 workers.[1]

§ 5. *Selling Sector*

The need for a sales organisation arises because shoe-retail shops far outnumber shoe-manufacturing firms, and because the locations of either do not coincide. In 1931 there were in Great Britain as many as 13,855 distributing units,[2] as compared with 1,054 manufacturing units, and whilst retail shops are likely to be found in all localities with more than 3000 inhabitants, manufacturing plants are more highly concentrated in certain areas. In order to maintain or to widen its market, a firm incurs certain sales costs, such as (*a*) travellers' remunerations, (*b*) stock-holding charges, and (*c*) advertising expenditure.

It has been a common practice in the shoe industry to employ travellers on a commission, rather than on a fixed salary basis, in which case large firms could not realise economies on travellers' account over small firms. Secondly, in so far as large firms held relatively smaller stocks than their smaller competitors, some economies on interest and warehouse charges would accrue to them. However, stock-holdings by manufacturers have been less pronounced in post-war years, owing to the increased fashion character of shoes. Thirdly, it was found that small firms scarcely ever advertise, and larger firms, which do advertise, either owned shoe-retail establishments, or by agency contracts

[1] We ascertained that roughly 2·5 square feet of upper leather and 1 lb. of sole leather are required for a pair of men's shoes. On the basis of employment and output figures, given in Tables II and VII, we estimated output per head to be 1,100 pairs (all shoes) and 870 pairs (shoes mainly of leather) respectively. To manufacture 7,500 pairs weekly would then require $\frac{7,500 \times 52}{870} = 450$ workers, or monthly = 120 workers.

[2] 1931, Census of Occupation Tables for England, Wales, and Scotland.

had control over independent retailers. Whether advertising expenditure should be allocated to the producing or the distributing unit is a matter of dispute. But even if these outlays for advertising were allocated to the producing unit, total sales costs per pair of shoes would not necessarily be higher for large firms, because such producer-retailers would require no travelling personnel. In short, whether sales economies accrue to larger firms cannot be ascertained from the information available.

§ 6. *Size of Firm*

Under prevailing technical and supply conditions of factors of production, there exists for each of the various sectors of firms one " minimum scale " of most efficient operation, beyond which no further economies accrue and prior to which economies arise from expansion. Since these minima scales of different sectors do not coincide, they have to be reconciled in determining the most efficient size for the firm as a whole.

It was suggested that a plant which employs between forty and sixty workers will reduce " technical costs " per pair of shoes to a minimum, whilst a firm employing between 120 and 450 workers will be required in order to reduce the costs incurred in the " buying sector " to a minimum. At neither of these employment criteria is the size of the firm determinate. For with an increase in employment in the technical sector, technical unit costs remain constant, and are not necessarily rising, and the same applies to an increase of employment exceeding the minima efficiency scales of the buying sector. It is, however, conceivable that managerial, selling, or financial costs per pair of shoes rise before the most efficient size of the buying sector is reached. In that case the firm will be determinate at a size at which economies arising from expansion in some sectors are being outweighed by a rise in unit costs in other sectors. At this optimum size average costs per pair of shoes are lowest. Since raw material, labour, and machine costs amount to over 90 per cent. of total cost of production, it follows that at whatever scale of operation the optimum size of the firm will be realistically determined, its superior efficiency will deviate but little from that of the firm whose size is determined by the minima scales of the buying sector.

Firms will not necessarily expand towards the size at which average unit costs are lowest, but will stop expanding at the point at which profits are being maximised. Under conditions of perfect competition—which assumes that all firms produce the same quality and design of shoe and that retailers are completely

indifferent to producers—both the cost and profit criteria coincide. In the real world retailers are not completely indifferent to producers nor are the shoes of any two manufacturers alike. The greater the imperfection of markets, the more do manufacturers tend to stop expanding at a size at which marginal costs cover marginal receipts and at which profits are being maximised. Market imperfection is most conspicuous in the ladies' branch of manufacture, in which emphasis on style and design of shoes has increased to such an extent in post-war years as to make the shoe industry the foremost fashion trade in the country.

§ 7. *Evidence of Fashion Element in Shoe Production*

Though manufacturers in the ladies' branch of production invariably point out that orders are much smaller to-day, than before the war, and that patterns have to be changed as frequently as three and four times a year, there are at least three sources of statistical evidence which show that the development of men's shoes manufacture is quite distinct from that of ladies' shoes. This differentiation is primarily due to the increasing fashion-character of ladies' shoes.

(1) It has been observed, firstly, that the amplitude of seasonal fluctuations was higher for the output of ladies' than for men's shoes, and, secondly, that this amplitude continuously increased during post-war years, particularly in the ladies' branch of shoe manufacture. This is shown on the basis of evidence presented by thirty-eight firms [1] in Table V.

TABLE V.

Ratio of Minimum to Maximum Months Production

	1921.	1923.	1925.	1927.	1929.	1931.	1933.	1935.	1937.
Men's shoes .	63	69	75	78	68	63	62	66	68
Ladies' shoes	54	59	66	52	49	32	39	43	40

For both men's and ladies' shoes the proportion of output at each of the two months of maximum production (August–September, and March or May respectively) to aggregate annual output remained fairly constant during post-war years. At the beginning of these two seasons manufacturers usually intro-

[1] Each of the thirty-eight firms employed more than 100 workers, and at the month of maximum production, ladies' shoes represented 55 per cent. of the aggregate output of our sample.

duced new styles and shoe designs. Although this applied generally to all grades and types of shoes, it was noticed that more and more sub-seasons were being introduced in the ladies' branch, in order to replace one fashion by another. This more frequent style change, which did not lower the output at the two top seasons, considerably reduced, however, ladies' shoe manufacture in January and July, and thus accounts for the increased amplitude of minimum to maximum months production of ladies' shoes.

(2) Other indirect evidence for the increased fashion-character of ladies' shoes may be derived from locational considerations. The location of production is determined at the point at which manufacturing and sales costs are lowest in relation to labour and material deposits and to centres of shoe consumption. The Midlands are in this respect an ideal region for shoe manufacture: (*a*) Northampton, which for centuries has provided boots to the Army, possesses a skilled-labour force with a long tradition of shoe manufacture; (*b*) The tanning of upper leather is mainly carried out in the Midlands; (*c*) the chief depot of the B.U.S.M.C. is located at Leicester; (*d*) the centres of sole-leather tanning at Hull, London, Bristol, and Liverpool circumscribe a region in which Northampton and Leicester are centrally placed; finally (*e*) from the Midlands, shoe manufacturers have access to a diversified range of sales markets, including the London, Lancashire, and southern shoe-consuming centres. Although all these factors seem to favour the Midlands as the chief manufacturing centre, the regional distribution of men's and ladies' shoe production, mainly of leather, is as follows :—

TABLE VI.

Percentage of Shoes (Quantity) Manufactured in Different Areas

	All Areas.	Northants.	Leicester.	Norwich.	London.	Bristol.	Other Areas.
Men's shoes 1924 [1]	100	74·1	3·6	0·5	4·4	5·9	11·5
Men's shoes 1930	100	79·5	3·2	0·2	2·6	4·4	10·1
Ladies' shoes 1924 [1]	100	7·6	44·3	12·1	15·6	2·8	17·6
Ladies' shoes 1930	100	7·5	42·3	10·9	10·3	1·9	27·1

[1] Including output of firms with less than ten persons employed.

Thus, whilst the manufacture of men's shoes is highly localised at Northampton and tended to increase during 1924–30, the manufacture of ladies' shoes is more widely spread, and this locational diversity of manufacture increased in post-war years. The attraction which consuming markets exercise on the manufacturing locations of ladies' shoes as compared with those of

men's shoes may be taken as indirect evidence for the more significant fashion element in ladies'-shoe production. For where fashion rules, manufacturers must keep in touch with local variations in style-demand, and the necessity for more frequent sales canvasses and for quick delivery of small fashion orders presupposes proximity of production to consuming markets.

(3) With the emphasis on style, colour, and design of shoes, deterioration in wearing strength and leather quality is quite natural. For the greater the annual shoe-consumption per head, the less are the requirements on the durability of individual footwear. The following table shows that aggregate production increased continuously during the period covering the four Census dates, and that it always exceeded national shoe consumption.[1] But the value of gross output declined from £47 millions in 1924 to £39·5 millions in 1935. This fall in gross output values was relatively higher for ladies' than for men's shoes. Since neither falling material prices—had the same materials been used in 1935 as in 1924—nor rationalisation in

TABLE VII

Production and Consumption of Shoes

(Million Pairs).

Great Britain.	1907.	1924.	1930.	1935.
I. Total shoe production . .	97·4	119·0	118·9	132·6
(*a*) Mainly of leather . .	—	87·1	95·8	105·1
II. National shoe consumption .	82·0	111·4	111·2	129·0
(*a*) Mainly of leather . .	—	77·5	88·1	101·9

technical manufacture or reductions in wages account wholly for this decline in gross output values, quality deterioration seems to have taken place.

The existence of a fashion element in shoe manufacture is evident from such considerations as the locational diversity of ladies'-shoe manufacture, the greater amplitude of seasonal fluctuations, and the quality deterioration of shoes. It remains to be explained why manufacturers embarked on variety production, and its effect on the size of firms.

§ 8. *Market Imperfection and Size of Firms*

Prior to 1900 shoes were fairly uniform in style, colour, and design. Large manufacturers, who competed in the same wholesale market, threatened to eliminate the less efficient smaller firms.

[1] Total production minus exports plus " net " imports.

This process of elimination was slow, for two reasons: firstly, aggregate national shoe consumption continuously increased, so that firms which commenced business on or grew quickly towards the largest scale added to the output of smaller firms rather than substituting it. Secondly, many independent retailers who enjoyed the goodwill of local customers were in turn favourably disposed towards certain manufacturers. Consequently, the exercise of such preferences by retailers made the growth and expansion of manufacturers dependent on the extent to which these retailers increased their own turnover, and on their success in establishing good relations with retailers who newly entered into the market. In order to overcome the limitations imposed upon size expansion by the market, some financially strong producers integrated in the pre-1900 period retail shops of their own. At the same time some distributive concerns, controlling a multiple number of retail shops, integrated backwards into production.

Although manufacturers were chiefly dealing with independent retailers, some multiple retailers and producer-retailers had come into existence by 1900. In subsequent years multiple concerns expanded rapidly, and the growth of multiple concerns conditioned variety manufacture in two ways: (*a*) By means of extensive advertising, by more attractive window-display, and by offering a wider choice of shoe-designs, multiple retailers endangered the sheltered position of independent retailers. In order to maintain their turnover, independent retailers retaliated by ordering from producers styles of shoes different from those displayed by their multiple competitors. Hence, in following the market, producers were forced to embark on variety manufacture. (*b*) With control over an increasing proportion of total national shoe distribution, multiple retailers also obtained a wider choice between the products of a larger number of producers. They would place orders with manufacturers who could offer attractive and original styles of shoes.

Except in cases where manufacturers enjoyed temporarily—on the basis of outstanding designs—a quasi-monopolistic position in the wholesale market, multiple retailers succeeded in keeping wholesale prices at a low level. Such pressure on wholesale prices, which was not necessarily accompanied by a corresponding reduction in retail prices, led increasingly to quality deterioration of shoes, and induced some financially strong manufacturers to fight the multiples. They branded their shoes, advertised their brands, and aligned themselves with independent retailers, who obtained exclusive agency rights for selling these brands at retail

prices fixed by the manufacturers. Three manufacturers succeeded in establishing their brands, but instead of fighting the multiples on retail prices, they preferred to follow them.

Brief reference ought to be made to the astounding post-war development of branded manufacturers, multiple retailers, and producer-retailers, whose growth intensified competition in the retail market on styles and designs rather than on price, so that non-integrated manufacturers were forced to produce along fashion lines. In 1937 nineteen multiple concerns, excluding the Co-operative Retail Societies as well as Department Stores, owned and controlled 2,840 or 20·4 per cent. of all British shoe shops, as compared with 1,317 in 1918.[1] Including the turnover of Co-operative Retail Societies, these concerns distributed in 1937 roughly 50 per cent. of the total quantity of shoes consumed in this country compared with just over 20 per cent. in 1918.[2] Of those concerns five were wholesale-retailers or pure retailers, and fifteen were integrated producer-retailers and branded manufacturers. But the proportion of shoes manufactured by these fifteen concerns in relation to the quantity of shoes sold through their own shops amounted to only 29 per cent. and in relation to aggregate national shoe consumption to roughly 13 per cent.[3] Hence as the share of multiple concerns in aggregate

[1] Of the fifty-three multiple retail concerns enumerated in the *Footwear Organiser Yearbook*, we selected all those which owned more than twenty retail shops. Amounting to nineteen, we consulted the managers of these concerns, and information was being obtained as regards the number of shops owned by each concern in 1918 and in 1937.

[2] Two multiple concerns, dealing in slightly different qualities and designs of shoes, supplied information as regards the total quantity of shoes distributed through all their shops. We determined the " average turnover per shop " for each of the two concerns, and we multiplied each figure by the number of shops owned by other concerns, and thus we obtained two estimates for the " aggregate retail turnover " of all multiple concerns. To these estimates we added the total quantity of shoes distributed through all Co-operative Retail Societies, which was directly supplied. These estimates, which refer to 1937, were related to aggregate national shoe consumption during 1935, and the ratios of the multiples' annual retail turnover to aggregate shoe consumption were 46·3 per cent. and 53 per cent., respectively. Assuming that the average turnover per shop was the same in 1918 as in 1937, and assuming that shoe consumption was approximately 100 million pairs (see Table VII) in 1918, the ratios of the turnover of multiple distributors to total consumption amounted then to 18 and 25·3 per cent., respectively.

[3] In three cases output figures were supplied directly. Output estimates of other concerns were based on the number of persons employed by these concerns in their various plants. The proportion of output to retail turnover varied considerably from one concern to another. Aggregate output of these fifteen concerns in relation to their agregate retail turnover amounted to 26 and 33 per cent., respectively, and in relation to total national shoe consumption the ratio was 13 per cent. Similar calculations for 1918 were omitted, because output estimates would have been very unsatisfactory for lack of sufficient data to go on.

shoe distribution increased from 20 per cent. in 1918 to 50 per cent. in 1937, and as they produced in 1937 only 13 per cent. of the shoes consumed in this country, non-integrated manufacturers had increasingly to deal with multiple retailers. Whilst multiple concerns would produce the more standard lines of their own retail turnover, it was left to non-integrated manufacturers to supply the fashion requirements, on the basis of which manufacturers hoped to secure a sales market for themselves, and retailers hoped to maintain or to increase their turnover.

It is usually maintained that post-war changes in dress habits (shorter frocks, coloured stockings), as well as the desire of people to imitate styles and designs of shoes worn by representatives of society at race events and in theatres, are the real reasons why the shoe industry has developed into a fashion trade. No doubt these factors have contributed to making the public pay more attention to novelty and styles rather than to wearing quality of shoes. But, although conditioning certain trends in shoe manufacture, the extent to which fashion rules nowadays must be explained primarily with reference to the attempt of both producers and retailers to establish for themselves a semi-sheltered market, thus leading the public rather than being led by it.

Fashion production affects the size of firms in two ways: (*a*) the greater the variety of shoes manufactured, the more complicated is the managerial task of co-ordinating the various sectors of the firm, and to the extent that erratic demand-changes require quick and frequent decisions, managerial efficiency decreases. This in turn will limit the expansion of a firm to a size smaller than that of a firm which manufactures but a single line of product. (*b*) In so far as selling prices for fashion-shoes fall with an increased supply, firms may stop expanding prior to reaching the scale of production at which average costs per pair of shoes are lowest. This presupposes, of course, that the gains in costs from expansion are being outweighed by an even greater fall in selling prices.

§ 9. *Conclusion*

In pre-1900 days the optimum size of shoe firms was large. Under conditions of competitive machine supply, with no attempt on the part of machine-producers to balance individual output capacities of machinery, relatively large manufacturing plants were required, in order to derive economies from mechanical team co-ordination. On the basis of production along standard lines, styles, and designs of shoes, managerial tasks were fairly simple, and large-scale buying of leather and selling of shoes

resulted in maximum cost advantages. However, growth towards that optimum was dependent on the rate of profit accumulations and borrowing facilities. To the extent that retailers were not indifferent towards manufacturers, size expansion was checked. Some financially strong manufacturers overcame this obstacle by integrating retail shops of their own.

The two outstanding features which since 1900 altered the character of the shoe industry completely and affected the size structure of firms composing it, were the substitution of competitive for monopolistic conditions of machine supply and a growing imperfection of markets on the basis of variety manufacture.

The supply of well-balanced teams by the B.U.S.M.C. enabled firms with plants consisting of approximately forty to sixty employees to reap all possible technical economies. The Company's leasing arrangements facilitated financially the entry of firms into the industry, and its peculiar royalty policy prevented the realisation of economies formerly derived from intensive machine utilisation. In contrast to the technical sector, the optimum of the buying sector was determined at a size employing between 120 and 450 persons. But at neither of these two employment criteria was the optimum size of the firm determinate. Assuming, rather than being able to prove conclusively, that managerial costs imposed an upper limit to size expansion, the optimum would vary according to the frequency of change involved in the types of shoes produced by different firms.

Firms with less than 500 employees which are primarily engaged in variety manufacture may be just as efficient as the twenty-five large-scale firms which produce almost exclusively standard lines of shoes. However, firms will not expand towards the size at which average unit costs are lowest if the losses in revenue, due to falling selling prices on their styles with an increased supply, are greater than the gains in costs from expansion. Where fashion rules, it is relatively easy for firms with novel and original designs to enter into the market. Thus the ease of entry into the industry provided by the B.U.S.M.C.'s leasing policy, the effect of variety production in reducing the optima scales of operation, and manufacturers' ingenuity in establishing a semi-sheltered market for themselves by the device of attractive styles and colours of shoes, account for the survival of small and medium-sized firms in the shoe industry.

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REVIEWS

Value and Capital. By J. R. Hicks. (Oxford, at the Clarendon Press. 1939. Pp. xii + 331. 12*s.* 6*d.*)

Professor Hicks, his place in the first rank of economic theorists long since secure, establishes by this volume his claim to admission to a narrower circle—the economists with a distinctive and distinguished style of writing. Take up any page of Pigou, Macgregor, Keynes, Robertson; you do not need to be told the author. And, henceforth, I think the Hicks' manner will be unmistakable. A matter, this, of no little importance to the reader, and perhaps in a subject still hovering on the margin of scientific status of no little importance to survival. Can the austere theorist, his mind wrapt in mathematical symbolism, ever obtain perfect command of the human palpitating instrument of English prose? Edgeworth gave a notable demonstration of the possibility, and Professor Hicks has now confirmed it.

His mood is a mellow and expansive one; there are friendly interchanges of confidence with the reader, which do not in the least detract from his dignity and precision; his companiony relation never lapses into the coy or the hearty. He achieves great feats of lucidity in many passages, even at times to the point of arousing the false hope that his volume will be easy reading. When the light grows dimmer, as it does sometimes, one feels that it is because there are some unstated though doubtless important problems being resolved by implication, that there is matter to be read between the lines to which one has no clue, and one is reminded of "a sort of social process which went on among the people who were working there [the London School of Economics], at that time, under the leadership of Professor Robbins" (Preface). There are probably some things in this book the full value of which can only be appreciated by the members of that society.

To attempt even a summary account of this rich feast of reason would be vain. The reviewer must confine himself to a few leading ideas. There are two weapons which Professor Hicks uses with effect to tackle a large number of problems. One is the division of the effect of a given change into the sub-

stitution effect and the income effect; the other is his division of exchangeables into the substitutive and the complementary.

The foundations are laid in his analysis of the static laws of exchange. As might be expected, Professor Hicks dispenses with the concept of utility and introduces us to the marginal rate of substitution and the principle of the diminishing marginal rate of substitution. Preferences are represented by indifference curves of an ascending order of magnitude; we may know that a given position C is preferred to A and that there may be an intermediate position B. But there are no means of—and perhaps no meaning in—attempting to measure the distance of C from B compared with that of B from A. Readers still hazy about the aims and technique of those who wish to substitute an analysis in terms of preference and substitution for Marshall's utility analysis of the elementary theory of value would do well to read this eminently intelligible account.

Professor Hicks generously recognises that Marshall made his analysis formally correct, and thereby provided himself with a tool which might be effectively used in various problems, by stipulating that the marginal utility of money should be constant. This point, which will always have been in the minds of careful economists, is worthy of serious consideration; for Professor Hicks in effect issues a challenge to the economic world to do nothing less that abandon once for all this concept of utility, so familiar in the classroom and their own speculation. Must they follow him? Or had they better continue in the traditional way, always stressing the postulated constancy of the utility of money to meet criticism? There is not much harm in keeping alive alternative methods of approach; too hasty a scrapping would probably be injudicious. The matter may be left to individual discretion for the time being; only a rather lengthy experience can be decisive in what is fundamentally a matter of expediency.

But meanwhile Professor Hicks reinforces his challenge by the use he makes of his own tools, and his notable contribution in this volume is *pro tanto* evidence in their favour. The division into income and substitution effects plays an important part. Marshall's assumption of the constant utility of money implies that income devoted to purchasing a given article is only a very small part of total income. Consequently in this case, if the price of that article and the amount of money spent upon it change, the effect on income is so small that it may be neglected. There is, in fact, no income effect! Professor Hicks also claims that though the problem of complementarity may be approached along

Marshallian lines, his own method makes a considerable sharpening of tools possible, and his prowess in handling this problem is already well known.

Now, may it not be the case that the assumption that any particular commodity plays so small a part in the life of an individual, that the income effect of a change in its price is negligible, is a sufficiently workable one? And so may not the Marshallian approach be sufficiently workable? The general trend of Professor Hicks' argument in the static section almost suggests that it may. For besides taking into account the income effect on consumers, he also has to consider the income effect on producers, and he is often content with the presumption that these may cancel each other out. Indeed, some readers may feel that he has missed an opportunity here in not using his tool for a more exhaustive analysis of the income effect on primary producers. His broad picture of production as undertaken by firms employing factors may have diverted his attention from a problem especially amenable to his method. But it is when we come to the "dynamic" problems, for example to changes in the rate of interest, that the income effect clearly becomes important and is crucial to the argument. This may suggest that the old approach will serve well enough for those who are confining their exposition or thinking to essentially static problems.

It is worth observing that Marshall's assumption of the constant utility of money is precisely analogous to the assumption of perfect competition. In the latter case a change in the supply or demand by any one seller or buyer of an article is supposed to be so small in relation to the total supply and demand as to have no effect on the price of the article; in the former case the value of any one article is supposed to be so small in relation to the total income of the individual that a change in its price has no effect on the marginal utility of his total income. The constant value of money may be said to assume "perfect competition among goods." Now, perfect competition in the ordinary sense Professor Hicks is prepared to swallow! He assumes it throughout his argument. He admits that this assumption may introduce error, but pleads that this is probably unimportant. Yet, on the face of it, "perfect competition among goods," which Professor Hicks rejects, seems less far removed from reality than perfect competition in the market of a particular good! Is his sense of proportion at fault here?

At one point he observes (p. 84), "It is, I believe, only possible to save anything from the wreck—and it must be remembered

that the threatened wreckage is that of the greater part of economic theory—if we can assume that the markets confronting most of the firms with which we shall be dealing do not differ very greatly from perfectly competitive markets." These are gloomy words! But are they not a little one-sided? While Professor Hicks has been saving economics from the wreck threatened by a challenge to the assumption of constant marginal utility of money, recent attempts by others to analyse the problems of imperfect markets may have left economics less un-seaworthy than this sentence suggests.

Before leaving this topic it may be well to make two philosophical reflections. Some philosophers jib at the idea that it is possible to measure subjective qualities, such as pleasure and satisfaction; and Professor Hicks appears mildly inclined to court their sympathy. An economics which attaches ordinal instead of cardinal numbers to states of preference is a concession to their point of view. Some extremists would not indeed be satisfied, for that it is possible to develop a highly mathematical system on the basis of an ordinal series no one is better qualified to show than Professor Hicks, and all mathematical treatment of human feelings is anathema to this school. But I suggest that even Professor Hicks' concession is dangerous, since one never knows that it may not be expedient, if only for some special purpose, to revert to the Marshallian method. The rejection of the utility concept should not be based on the idea that there is in principle anything wrong in applying a scale of cardinal numbers to human feelings. For if Marshall's assumption of constant utility of money were justified, we should be able and wish to do so. If Marshall's assumption is not justified, that is not owing to anything in the nature of human feelings themselves; the trouble is on the side of commodities, the range of alternatives is too narrow, the sub-division of income into a variety of uses insufficiently great. But Marshall's hypothesis may still have its sphere of usefulness; and we should no more be debarred by philosophical considerations from using it, than Professor Hicks has felt himself debarred from using the hypothesis of perfect markets.

On page 13 he remarks, "If one is a utilitarian in philosophy, one has a perfect right to be a utilitarian in one's economics. But if one is not (and few people are utilitarians now-a-days), one also has a right to an economics free of utilitarian assumptions." This is no doubt true; we must beware of the intrusive ought. But the connection of ideas is not clear. Utilitarian philosophy does not necessarily imply attributing cardinal

numbers to the scale of human ends; and, even if it did, the economist's choice between cardinal and ordinal numbers has no relevance to the question of subordinating economics to an ethical system. It would be a great confusion of thought to suppose that the economist in replacing cardinal by ordinal numbers in some way releases his subject from subservience to a particular moral philosophy. One may adhere to the cardinal scale without being a utilitarian and conversely. Whether Professor Hicks is right in thinking utilitarianism *démodé* is also irrelevant. One may be permitted to plead for the continued vitality of the only ethical system which is proof against the modern view that ethical propositions are mere emotive noises. Those who are not impressed by these modern views on the one hand and those who do not object to the conclusion that ethical propositions are merely emotive noises on the other will be indifferent to this plea; but I suspect that the future of moral philosophy, if freedom of philosophical inquiry survives our present turmoils, may lie along the middle way of utilitarianism.

The major part of this volume is concerned with " dynamics." The distinguishing features studied here are expectations and capital accumulation, and of these Professor Hicks is mainly concerned with the former. There is, however, a lengthy discussion of interest theory. Professor Hicks finds an ingenious way of reconciling the views of Mr. Keynes and his critics; it is not for a reviewer to intervene between Professor Hicks and Mr. Keynes, but some suspicion must be registered that Professor Hicks has not fully unfolded the whole truth of the matter. Professor Hicks covers much ground, the production plan of the firm, the definition of income, the views of Böhm-Bawerk and Wicksell, the balance between spending and lending, etc.

He employs his carefully constructed tools to examine stability when expectations are taken into account. In considering expectations, he concentrates upon expected prices. He is able to show that when a given price change leaves expected prices unchanged the system should be highly stable. If a given change gives rise to the expectation that prices will remain in the future at the new level, the system is hovering on the verge of instability. If a price change gives rise to the expectation of a further change in the same direction, the system is unstable. This notion that an expected continuance of a movement of prices in a given direction causes instability is in itself old; but his method of analysis and the use of more precise tools endows Professor Hicks' theory with a high degree of originality and interest.

He defines dynamics as that part of economic theory in which "every quantity must be dated" (p. 115). This definition is in accordance with recent usage. Professor Hicks claims to have laid the foundations of a dynamic theory. Without wishing to derogate from the great importance of Professor Hicks' work in his chosen field of expectations, I venture to suggest that this is not the best use to which we may put the word dynamic and that we may soon be able to develop an economic dynamics, the foundations of which are not to be found in this volume.

There is no law, save that of expediency, governing the use of terms. Statics and dynamics, however, are borrowed from another science, and analogy may give some clue to the usage which will put us on the best line of advance. Statics is concerned with a state of rest, and in economics this is achieved when the determinants of the equilibrium, tastes, resources and expectations, retain constant values. The system is at rest because prices and quantities produced remain constant. In dynamics, I suggest, we should postulate first a constant rate of change, and then, when our theory becomes strong enough to stand it, a changing rate of change, in the fundamental determinants. The resultant continued movement of prices and quantities produced under the influence of these forces would then be demonstrated. Statics would become a special case of the more general theory, namely, when the rate of change in all determinants was zero. Such a usage would not only preserve the analogy with mechanics, but would, in my judgment, be useful in directing investigation in a profitable direction. I believe that some foundation stones of this new theory are already in place and that there is some danger that the other usage may deflect attention from this important work.

Expectations in themselves belong both to statics and to dynamics. In the former study they are supposed to be unchanged during the maintenance of a given equilibrium. In so far as Professor Hicks concerns himself with changing expectations, he is indeed concerning himself with what I venture to call true dynamics. But his analysis remains essentially static, because the unknowns which he uses his apparatus to determine are amounts of outputs and prices at a given point of time, and he regards a change in these as a transition to a new equilibrium. In true dynamics the unknowns would be rates of increase or decrease in certain magnitudes (quantities of output, etc.), velocities as opposed to states of rest. The change of a magnitude would no longer be regarded as a transition, but a

continuing property of the economy as determined by the fundamental forces.

Such a development of theory is suggested not only by analogy with mechanics, but also by the facts of our economy. For we are concerned with societies in which population is continuously increasing (or decreasing) and capital accumulating. It is rather absurd that we should continue to consider these phenomena in our analysis as successions of discontinuous changes. Professor Hicks has a chapter on capital accumulation, but here again his analysis is in terms of a once-over injection, tracing its successive repercussions, rather than in terms of a steadily continuing increase.

For Professor Hicks expectation is, apart from some secondary matters connected with complementarity, the main cause of instability. I believe that it is premature to hold this view, until a dynamic theory has been developed on the lines suggested, and that the dynamic determinants might set up instability even if the whole future was foreseen and expectations therefore remained constant.

This digression is intended only to direct attention to an alternative view as to the proper place of dynamics in economic theory, and not to belittle the supreme interest and importance of Professor Hicks' investigations.

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Essays in the Theory of Economic Fluctuations. By M. KALECKI. (London: George Allen & Unwin. 1939. Pp. 154. 6s.)

DR. KALECKI has published in this volume a collection of six stimulating essays, the main purpose of which is to apply certain aspects of the theory of imperfect competition to a development of Mr. Keynes' theory of fluctuations in the general level of employment and output. The volume also contains a number of valuable statistical illustrations of the different points as they are developed; and the reader is left with the excellent impression—which is often so sadly lacking in a volume of this kind—that the author really desires to ensure that his very severe and precise analytical reasoning shall fit the facts. It is peculiarly difficult in a short review to do justice to this book. Each of the six essays contains suggestions which display a remarkable originality of thought and an unusual gift of compressed analytical reasoning. It is possible only to offer a few comments on the

main theme of each essay, on the assumption that any economist who is interested in this type of work will read the volume carefully for himself.

The first essay starts by demonstrating statistically that in the United Kingdom and the United States the proportion of the gross national income which is paid to wage-earners has shown a remarkable constancy both in the long- and the short-run. It then proceeds to develop a theoretical explanation of this phenomenon on the assumptions that competition is imperfect and that production takes place over that range of short-period cost curves within which the physical returns to the prime factors labour and raw materials are virtually constant. Following Mr. Lerner, the ratio of price *minus* marginal prime cost to price is taken to measure the degree of imperfection of competition; and since marginal prime cost is assumed to be equal to average prime cost, this ratio also expresses the proportion of the total amount spent on a commodity which goes to factors other than labour and raw materials. It can then be readily shown that under these conditions the proportion of gross income which goes to wages will be lowered: (i) by an increase in the degree of monopoly, or (ii) by an increase in the raw material element relative to the labour element in prime cost.[1] The former factor is well known to students of the theory of imperfect competition. The latter factor is due to the fact that a rise in raw-material prices, while it may leave the distribution of income unchanged in the industries producing raw materials, will increase profits without increasing wages in the industries using raw materials, because with a given degree of imperfection of competition the profit element in price will bear a constant ratio to the wage cost *plus* the raw-material cost.

The author then proceeds to give reasons for believing that both in the long- and in the short-run these two factors have worked in opposing directions, although, as he himself points out, this involves the belief that competition becomes less perfect, and not, as Mr. Harrod has suggested, more perfect, in a depression.

[1] Personally the reviewer found it easier to understand the argument after transforming Dr. Kalecki's equation (4) on page 29 into the alternative form $\frac{W}{A} = 1 - \overline{\mu} \cdot \frac{T}{A}$ in which case the second factor reducing the proportion of gross income going to labour is an increase in the ratio of total transactions to total income. The fundamental point is that in the conditions which Dr. Kalecki is examining gross profits bear a constant ratio to the volume of total *transactions*, and not to the volume of total *income*, when the degree of imperfection of competition is given. A rise in the raw-material cost relative to labour costs reduces the proportion of income going to labour, because it raises the ratio of total transactions to total income.

It is perhaps not sufficiently emphasised that this is only one plausible explanation of the constancy of the distribution of income. It depends on the accidental balancing of the two factors mentioned above,[1] and no doubt other theories could be constructed which would depend also on the accidental balancing of various forces. It would be interesting, therefore, if further realistic work could be done on this subject, *e.g.* by examining to what extent average prime costs are constant, and by measuring quantitatively the changes in the ratio of raw material to labour costs and in the degree of imperfection of competition, in order to see independently whether these have been such as to offset each other in Dr. Kalecki's formula.

There are, in the reviewer's opinion, two tacit assumptions which the author should have explicitly stated. First, he must assume that there is no significant degree of monopsony in the purchase of labour and raw materials; for this is a necessary condition, in addition to the constancy of physical returns to the prime factors, in order to ensure an equality between average and marginal prime costs. Secondly, he often expresses the second of the two factors determining the distribution of income as the ratio between the *price* of raw materials and the labour cost, whereas in fact he should speak of the ratio between the raw material *cost* and the labour *cost*. Does he assume that, even in the long-run, there are no significant changes in technique which reduce the *real* raw-material cost per unit of output?

In his third essay [2] the author applies this argumentation to the problem of the relation between money and real wages. If total wages ÷ total income is constant, then the wage cost per unit of output ÷ by the price of a unit of output must be constant. If production is limited to the range in which the average prime cost curve is constant, the wage cost per unit of output varies with the money wage-rate; and if, further, as the author argues elsewhere, the cost of living varies closely with the price of a unit of output, it follows that the real-wage rate will be constant in the short-run. This argument is strengthened by an illustration from the United States, in which it is shown that real wages, after elimination of trend, have remained fairly stable in spite of large changes in total output.

This is contrary to the "orthodox" view that in the short-

[1] Mr. J. M. Keynes in his article "Relative Movements of Real Wages and Output," in the ECONOMIC JOURNAL of March 1939, has already stressed this point.

[2] It is a pity that essays 1 and 3, which are so closely connected, should have been separated from each other.

run an increase in output is possible only if real wages fall. The main difference between the two theories is that the " orthodox " view is based on the assumption of a rising average prime cost curve and, in some cases also, of perfect competition, whereas Dr. Kalecki's theorem is based on the assumptions of a horizontal average prime cost curve and imperfect competition. But there is evidence [1] that the " orthodox " view fits the facts better in certain countries other than in the United States. It would perhaps help to throw light on the propositions of Essays 1 and 3 of this volume if it could be discovered: (i) whether there are differences in the shape of the short-period cost curves in the United States and in those countries in which a decrease of output is associated with a rise in the real-wage rate, and (ii) whether there is short-period constancy in the distribution of income also in those countries in which the real-wage rate varies in this way.

In the second essay the author discusses the theory of the " multiplier " on the assumptions that a constant proportion of income goes to labour, that wage-earners do not save any part of their income, that changes in the rate of interest have no appreciable effect on saving, and that changes in capital values also have little effect upon capitalists' consumption.[2] A statistical illustration from the experience of the United States gives a very good " verification " of the theoretical conclusions which the author reaches; and this illustration is greatly improved by the introduction of a time-lag of some four months between changes in investment and the consequent changes in national income—the time-lag being, of course, due to the fact that there is some delay between a change in non-wage-earners' income and the consequent change in their expenditure on consumption.

The fourth essay is devoted to a discussion of the factors which set a limit to the amount of new investment which any individual entrepreneur will plan, when it is profitable for him

[1] Quoted by Mr. J. M. Keynes in the article to which reference is made above.

[2] The statistical illustration of the realism of this last assumption for the United States (cf. p. 58) appears to the reviewer to be the least satisfactory passage in Dr. Kalecki's book. The figures of capitalists' consumption are at the best only very approximate. The year 1929 is considered as a whole, although there were violent changes in capital gains between the first three quarters and the last quarter of that year. Finally, the comparison of the figures given by Dr. Kalecki for 1926 and 1928, and of those for 1928 and 1929, suggest that capital gains may have influenced expenditure appreciably. Certain authors (cf. Dr. J. Polak, " Fluctuations in United States Consumption 1919–1932," *Review of Economic Statistics*, Vol. XXI, No. 1, Feb. 1939, and Professor Tinbergen in a study shortly to be published by the League of Nations) suggest that capital gains have exercised an appreciable influence on consumption in the United States.

to extend his plant. To two generally accepted factors—viz. the diseconomies which may result from extending operations on to too large a scale, and the imperfection of competition which may make it increasingly difficult to dispose of a larger output—Dr. Kalecki adds a further factor, which he calls the Principle of Increasing Risk. The greater the extension which is planned, the greater is the proportion of the funds which the entrepreneur must borrow from outside to finance his extensions; and the greater this proportion becomes, the greater is the risk which outside lenders must take, and the higher therefore the risk-premium which they will demand.

The fifth essay—the shortest and least original in the book—deals with the reasons for the relative stability of the long-term rate of interest in the course of the trade cycle; and the explanation runs in the now more or less familiar terms of the relation between the short-term rate of interest and the expectation of the future course of long-term interest rates.

The sixth essay presents a complete theory of trade fluctuations, on the basis of much that has gone before in the previous five essays. The theory is based on the assumptions of a closed system, of no appreciable changes in inventories, of a balanced State budget, and of the absence of a secular trend. The theory itself is an ingenious and suggestive one. The decision to invest is taken as dependent primarily on the ruling rate of profit, and this in turn is taken to be dependent on two factors: (i) the size of the national income which determines the total profit, and (ii) the existing stock of capital equipment which determines the profit rate per unit of capital equipment. Investment decisions will be raised either by a rise in total national income (and so in total profit) or by a fall in the existing stock of capital equipment. The national income, in turn, is made to depend—with a time-lag—on investment decisions. For the actual rate of capital construction depends on investment decisions taken over a past period equal to the period of construction of capital goods; and the national income depends on the rate of capital construction ruling at some period in the past, this period being dependent on the delay between the receipt of income by capitalists and its expenditure.

National income rises when the current rate of profit is such as to cause investment decisions to exceed the current rate of investment. But when gross investment rises above the needs of replacement, the capital stock rises, and this tends to reduce the rate of profit. At some point this influence gets the upper hand

and investment decisions fall below the current rate of investment. National income and profit then decline; and this proceeds until investment falls below the needs of replacement, which tends to raise the rate of profit. When this influence gains the upper hand, the upward movement starts again.

This brief outline cannot do justice to the ingenious argumentation with which the author discusses the inter-relationships between the various factors. It must suffice here to say that the theory provides a most plausible explanation of cyclical fluctuations. It is to be hoped that Dr. Kalecki will develop his argument in a more extensive treatment of his ideas. First, it would be interesting to see what are the logical results of modifying the rather severe initial assumptions, and in particular the assumption that there is no secular trend of capital accumulation. Secondly, it would be useful to submit the perfectly logical theory [1] to factual tests, and in particular to measure the influence of variations in the total capital stock on the rate of profit, since this factor plays so large a part in the theory.

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The Economic Recovery of Germany, from 1933 to March 1938. By C. W. GUILLEBAUD. (London: Macmillan & Co. 1939. Pp. xiv + 303. 10*s.* 6*d.*)

THE purpose of this important book is to give, for the benefit of the general reader as well as the economic specialist, an orderly and objective account of economic developments in Germany under the Nazi régime. There is no doubt of the learning and skill which Mr. Guillebaud has brought to his task. The book is well arranged and extremely readable. The main facts of the struggle with unemployment and subsequently with labour shortage—of the progress towards autarky and the present peculiar system of foreign trade—of the extension of control over the markets for commodities, labour and capital—of the new organisations in agriculture and industry—are clearly and interestingly set forth. And a place is found too for mention of several less-known features of the régime, such as the attempts

[1] One small criticism of detail may perhaps be permitted. The argument on pp. 124 and 125 determining the time-lag between investment decisions and the subsequent rate of investment needs modification for the turning points from a rising to a falling rate of investment and *vice versa*. It will readily be seen from the graph on page 124 that if the curve *PNQ* reached a maximum at *N*—as it would do during the turn from an upward to a downward movement—the quotient "shaded area $\div \theta$" might be far from equal to the median line *MN*.

to guide consumers' demand in response to the vagaries of the seasons (p. 163), and to bring latent industrial capacity to the fore (p. 196).

Nor can there be any doubt of Mr. Guillebaud's intention to paint an impartial picture. In estimating that the standard of life was about the same in 1938 as in 1929, he does not omit to warn us that the official cost-of-living figure does not reveal the whole truth (p. 186): nor does he conceal the nuisances and vexations imposed by the régime (p. 222), nor the inner contradictions to which it has been subject, especially as regards the position of the peasant (pp. 116–17) and the small industrialist (p. 246). Yet it is arguable that in his laudable desire to be fair to the Nazi system, and also to dispel a mischievous belief in the inevitability of its early breakdown, Mr. Guillebaud has sometimes been tempted, like vaulting ambition, to o'erleap himself and fall on the other.

Thus he would have us think charitably of Germany's treatment of her foreign creditors; and to this end (p. 62) performs or reproduces a curious calculation by which the outflow of gold and foreign exchange in 1932–4 is *added to* the outward movement of capital instead of being treated as its vehicle: "it is to such figures as this that the Germans point when they contend that they were doing their utmost to meet their foreign obligations." He gives no hint of the extent to which the halving of the foreign debt (pp. 213, 282) has been due to the fact that Germany could apparently afford exchange to buy up at default prices the bonds on which she could not afford to remit the interest; and his estimate (p. 100) of the interest actually remitted in 1935 appears to be more than double that given by Dr. Eicke at the time (*Economist*, May 2, 1936, p. 245).

Again, is it, I wonder, the sign of a very bigoted Free Trader to feel that the defence put forward on economic grounds (p. 106) for the pursuit of autarky in respect of raw materials requires a little more critical dissection than it receives? On these lines it would seem that England might be able to improve her standard of life enormously by growing all her cotton at prodigious cost in glass-houses at home; for she would then be free to import a great deal more French wine and Russian caviare instead.

Again, Mr. Guillebaud is more concerned (pp. 86, 105 *n.*, 237) to warn us against over-estimating than against forgetting the part played since 1935 by rearmament, as compared with other kinds of "investment," in the process of expansion. In appraising his treatment of this matter it is indeed necessary to bear in

mind the inevitable time-lags between composition and publication, between publication and review. Had he been writing in April 1939, he would probably have forestalled one of his critics (*Economist*, April 1, 1939, p. 4) by elevating to a more prominent position the caution, now blushing modestly in a footnote near the end of the book (p. 268), that "the German economic system under present conditions has many of the characteristic features of a wartime-economy." *Per contra* he might have felt compelled to withdraw his concession (p. 236) that armaments are an "unproductive" form of investment: for from Germany's point of view why should a war-machine designed to extract juicy slices of *Lebensraum* from her neighbours by a succession of threats and acts of violence be denied the attribute of economic productivity? In any case the problem of how far Germany's achievement of full employment has been due to her being a Planwirtschaft and how far to her being a Wehrwirtschaft is likely, I think, to remain obscure. The fact that (if the above-mentioned critic is to be believed) she has not been conspicuously more successful than Britain in creating industrial employment does not indeed alter the fact that she *has* been conspicuously more successful in eliminating unemployment. But equally the fact that she *has* eliminated unemployment does not prove that she *would have* done so if her energies had not been canalised towards the over-riding aim of intimidation and annexation: even sloppy old Britain can stumble into labour shortage in war-time.

In assessing the stability of the German system, Mr. Guillebaud implicitly adopts (to the natural pleasure of the present reviewer) a double-headed theory of the possible causes of the onset of depression in a *laissez-faire* economy. From a Hayekian crisis due to "shortage of saving," Germany has so far been preserved by her rigid controls of the markets both for money capital and for capital goods, and by the stabilisation of basic money wage-rates at depression levels—supplemented, Mr. Guillebaud believes (p. 254), by the inveterate thriftiness of the German people. Against a Keynesian slump due to "excess of saving" he believes her to be fore-armed by the mass of constructional work—industrial reconditioning and replacement, canal-making, house-building—waiting to be taken up when the pressure of rearmament ceases: and in the background there remain possibilities of orderly transition to enhanced consumption (p. 261). Certainly a totalitarian economy, with its direct controls over the occupational distribution of free capital, entrepreneurship and labour, is theoretically in a much stronger position than a *laissez-faire*

economy to cope with the problems of demobilisation. But the German machine, as Mr. Guillebaud half admits (pp. 243, 263), seems to be subject to peculiar pressures and momenta of its own : and at the moment of writing (April 26, 1939) it remains uncertain whether its nature is such as to permit the phase of demobilisation ever to be reached, before involving itself and the rest of the world in irretrievable ruin.

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Commodity Flow and Capital Formation. Vol. I. By SIMON KUZNETS. (New York : National Bureau of Economic Research. 1938. Pp. ix + 505. 21*s.*)

IN his study of the national income of America Dr. Kuznets goes from strength to strength. In this volume he continues and amplifies his previous studies and in so doing has produced a book of great interest and considerable novelty. In it, all the arts of this branch of political arithmetic are combined with a degree of industry which is only possible to an investigator backed by a large institution like the National Bureau.

The work itself is divided into several sections each dealing with one of the items into which the national income is divided for the purpose of estimation. Each of these sections contains an introduction dealing in considerable detail with the data used, the method of estimation, the criticism that can be brought against the estimates and the order of magnitude of the errors involved. In addition, where possible, comparison is made with estimates based on methods other than the one finally adopted. These introductions are each followed by the relevant data and estimates together with tables giving details of the calculations which would have spoilt the flow of the text.

So much for the general arrangement. We come now to the estimates themselves. The first and largest problem is to estimate the flow of finished commodities (excluding construction) to ultimate consumers at prices paid by them, allowance being made, of course, for imports and exports. The basic material here is the biennial census of manufactures with its minute commodity classification, and the first task is to group the items given in it into finished and unfinished and to estimate the proportion of each in any category that may be supposed to contain both. The minor groups are then interpolated for intercensal years and adjusted for price changes in as small aggregates as is possible with existing material. So far we have only an annual estimate

of finished goods at *producers'* prices, and the next stage is to investigate the spead between such values and the prices of the goods to their ultimate consumers by making an allowance for transportation costs and distributive margins. These results are, of course, presented not only in the form of average or total figures but also subdivided into as many subgroups as possible.

This main analysis is followed by separate estimates of the volume of construction and the net change in business inventories. In America, despite the amazing wealth of statistical data, the first of these presents unusual difficulties and Dr. Kuznets relies, as in previous studies, on estimates based on the flow of building materials and the ratios which these bear to total construction of various kinds. The author finds that this method gives results which check well with other estimates so far as the broad sweep of the data is concerned, but expresses some doubt as to the reliability of the year-to-year changes.

In the final section the movement of business inventories is analysed. The methods presented in previous papers are followed, but the results are given in much greater detail. Many readers will already have been struck by Dr. Kuznets' figures showing the divergence between fixed capital formation and changes in inventories, especially in view of the importance of this distinction in explaining changes in investment.

The work as a whole is prefaced by an excellent summary of its contents and concludes with an interesting survey of the main findings. For one who has had no personal experience of measuring the constituents of the American national income it would be useless to attempt a detailed appraisal of the estimates. But it is only right to say the measurements seem logically conceived, adequately checked and interestingly and attractively presented. It is, perhaps, to be expected that in the future, as in the past, new material and the deeper probing of existing material will in many cases make possible better estimates with a consequent revision of those we have to-day. In the meantime, however, there can be no doubt that Dr. Kuznets and the National Bureau have made a great contribution to economics which will be valued by all who wish to divorce the science from mere empiricism or sterile theory.

RICHARD STONE

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The Causes of Economic Fluctuations. By W. I. KING. (New York: The Ronald Press Company. 1938. Pp. xv + 353. $3.50.)

THE Preface explains that the purpose of this book is to give the "answers" to the questions which "every thinking individual" is asking about the causes of and remedies for industrial fluctuations—answers which, Prof. King complains, "are not given directly and simply in any of the numerous treatises dealing with variations in business activity." It must be admitted that Prof. King does, in the course of his book, give answers to many of these questions, but without the careful analysis which alone could justify the confident and dogmatic language in which they are expressed.

The long lists of references which Prof. King places at the end of each chapter contain, for the most part, the books to which a student of industrial fluctuations should have been referred a decade or a generation ago. A large proportion of the rest are treatises on such subjects as sun-spots and climate or semi-political tracts. There is little evidence in the references, and less in the text, that Prof. King has read or understood the very important contributions which economists have made to his subject in recent years.

The first third of the book contains a description of business depressions and a critical account of various "inadequate and misleading" explanations of the causes of depressions. The remaining two-thirds of the book contain Prof. King's own analysis of the "depression culture-medium" and the origins of depressions, followed by a discussion of various suggested remedies. The theories criticised in the first part are chiefly of the popular variety; most are mere catchwords or phrases, such as "over-production," "over-saving," "excess plant capacity," "shortage of purchasing power." There is almost no reference to the theories of fluctuations which professional economists have considered seriously in recent controversy. Mr. Keynes' *Treatise*, for example, is mentioned only in the references, while the suggestions of *The General Theory* are completely ignored.

One would have thought that recent literature on the subject, if it had accomplished nothing else, had established the absolute necessity of defining carefully such terms as "purchasing power," "saving," "investment," and "credit"; but Prof. King, although he uses each freely, and one suspects in several different senses, does not bother. It is therefore not altogether surprising that he has so little difficulty in disposing of the explanations of

others and in stating his own in a form in which they appear plausible to the non-professional reader.

Prof. King seems to be chiefly interested in establishing a case against two popular measures for dealing with depressions which have been incorporated in the New Deal. One is government borrowing and spending, of which he says (p. 217), "It is important . . . to emphasise the fact that no amount of employment in boondoggling or other make-work projects, if financed by charity, taxation, or borrowing from the public, has the faintest tendency to stimulate recovery." The other is the maintenance or raising of wage-rates, and all measures, like unemployment insurance, which tend to support wage standards. Compensation for persons unemployed, he says (p. 175), "will, of course, intensify the already excessive rigidity existing in wage rates, and will, therefore, increase the volume of unemployment and make depressions more severe."

The objection to borrowing and spending is based partly on a purchasing-power argument. Proponents of the plan, he states (p. 202), "commonly ignored . . . the fact that . . . the purchasing power of the bond buyers was curtailed to exactly the same extent as the purchasing power of those receiving the money from the government was increased. . . . The truth is that spending by government can stimulate business only if the money spent is secured by inflating the supply . . . of . . . money." This argument is reinforced by the simple assertion (p. 284) that *any* measure which increases the public debt "will not improve conditions, but, instead, make the depression worse." The objection to the maintenance of wage rates is based on a careless and unconvincing argument which makes use of a demand curve for labour (p. 176) expressing a functional relation between volume of employment and *money* wages. The effect of price and wage rigidities on the trade cycle is in need of a thoroughgoing analysis (it is interesting to note that Prof. Hicks, *Value and Capital*, p. 298, concludes that they prevent a depression leading to a complete breakdown of the system), but Prof. King, while rightly stressing the significance of such rigidities, does not even indicate a promising line along which such an analysis could be attempted.

Perhaps the most interesting parts of Prof. King's book, for the English reader at least, are those in which he expounds the views of several authors who have been relatively neglected on this side of the Atlantic. Much space is devoted to the results of the researches of C. G. Garcia-Mata and F. I. Shaffner

on the relation between sun-spots and trade activity. The correlation between the first differences of the area of sun-spots and the magnitude of industrial production in the United States is shown to be astonishingly high for the period 1875–1930, but the explanation, to which Prof. King is attracted, that the changes in solar rays determine the state of optimism or pessimism of entrepreneurs, is neither proved nor plausible. The possible usefulness of Prof. F. D. Graham's proposals for employing the unemployed during depressions and Dr. J. H. Bond's ingenious social credit scheme, which are outlined in the last two chapters, fortunately does not depend on the validity of the analysis which persuades Prof. King to give them his qualified approval.

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The Movements of Interest Rates, Bond Yields and Stock Prices in the United States since 1856. By F. R. MACAULAY. New York: National Bureau of Economic Research. (London: Macmillan. 1938. 9″. Pp. 591. 21*s*.)

THE tone of this book is set by an introductory chapter on scientific method, written with brilliant urbanity. Dr. Macaulay is clearly aware of current controversies, but does not refer to them explicitly. He draws lucidly the familiar distinction between the deductive and the empirical approach to economics, and then illuminates it. Most deductive economists have set out to show what would happen if men could forecast the future accurately and acted rationally. The value of this technique in describing existing conditions would not be seriously impaired by the obvious falsity of its basic assumptions, provided that individual deviations from ideal behaviour cancelled out, or followed a constant pattern. Unfortunately they tend to be cumulative and erratic, and therefore socially important. The purely empirical approach is dismissed with less ceremony:

> "... purely empirical study of how men *seem to have* acted in the past will not *necessarily* solve the problem of how they *will* act in the future ... if no explanation of why a functional relationship should exist can be supplied by other than a grossly *ad hoc* hypothesis, the 'generalisation' may work for years and then fail forever. And, of course, be theoretically quite unfruitful"[1] (p. 19).

"Real explanations," Dr. Macaulay insists, "come by way of shrewd conjecture followed by adequate testing—the old-fashioned road of intelligent hypothesis followed by rigid verifica-

[1] Dr. Macaulay's italics.

tion" (p. 8). We must not expect confused and complicated data to yield clear-cut solutions, and we must refrain from harrying the economist with metaphysical problems. For example, discussion of interest rates may prove fruitful where controversy over the rate of interest would be inevitably sterile. Only by contrast with the observed data can study of a world of perfect forecasting and complete rationality be expected to be helpful. It is the duty of the economist to discover how men behave, not to make unverified assumptions about their behaviour.

It is essential that the reader should grasp the importance of this chapter, which has been reprinted separately in pamphlet form, for otherwise he may misunderstand the intention of the book. Dr. Macaulay is nowhere concerned to say, "Here are the answers to some of the problems of the business cycle," but rather, "This is the sort of way in which these problems should be tackled."

The later chapters show him, as it were, in action. His general approach saves the basic concepts from ambiguity, for they must be capable of statistical measurement; for example, "interest rates," and the "yield" and "duration" of a bond, are precisely defined. The core of the book lies in Chapters III to V, which are chiefly devoted to the construction and analysis of index numbers of the yields of American railroad bonds from 1857 to 1936. Dr. Macaulay explains in detail why he chose to work with these particular data, and also the nature and purpose of the statistical devices used. In a sense, he plays with his hand fully exposed. The results of the study throw valuable light on the relations between railroad prestige, bond yields, interest rates and fluctuations in general business activity during the period; and readers who are not statisticians will find that Dr. Macaulay's skill in exposition makes these chapters pleasant, though solid reading.

Dr. Macaulay next discusses interest rates and commodity prices, and proves a lively controversialist. He admits that it is easy to obtain a high positive correlation between interest rates and commodity prices, and that this suggests a functional relationship which requires explanation; but the problem is revealed as a classical trap for the statistician turned interpreter or prophet. The data themselves are unsatisfactory; too much depends on the choice of period or of time-lag.

> "For example," as a sly footnote points out, "by using only a little statistical ingenuity in the choice of functions and lags (and chicane in the choice of period) we obtained for forty-eight years of American bond yields and American

> commodity prices a [correlation] coefficient of $+0{\cdot}974 \pm 0{\cdot}005$" (p. 176).

(Commodity prices were taken from 1866 to 1913, and bond yields from 1869 to 1916, a lag of three years.) Dr. Macaulay gives his reasons for thinking that, in his analysis in the *Treatise on Money*, Mr. Keynes was equally open to criticism for his choice of periods. In the passage criticised (*Treatise on Money*, Vol. II, pp. 198–201), Mr. Keynes was chiefly concerned to prove that a positive correlation existed; others who have tried to explain it are handled with less respect. In an entertaining passage where statistical technique and destructive logic are effectively combined, Dr. Macaulay exposes Professor Irving Fisher's demonstration, that the "true" relationship is between *rising* commodity prices and high interest rates, as merely an unsuccessful attempt to twist the data to fit an *a priori* hypothesis. In the end, however, Dr. Macaulay's analysis leaves the problem unsolved; he makes some suggestions, but warns that any attempt to fit them closely to the data will not bear critical examination.

The book ends with a short chapter on "Factual Leads and Lags and Empirical Forecasting." Charts are shown which summarise important economic series relevant to the business cycle; the difficulties which lie in wait for the forecaster are stressed, and the reader is advised not to jump too readily even to plausible conclusions. A fuller treatment of the material presented presumably awaits publication of a second volume which Dr. Macaulay promises us, in which the relation of interest rates to banking and credit conditions will be discussed.

This review must necessarily be incomplete, since the reviewer is himself not equipped to appraise critically Dr. Macaulay's statistical methods. For this reason alone a professional statistician would have placed the stress differently; and three hundred and fifty pages of appendices provide him with the data to check Dr. Macaulay's calculations and reasoning at any point. No reader, however, can fail to be impressed by Dr. Macaulay's "grip" on his subject, the close relationship in which the statistical analysis is held to the economic problem, and the scientific caution with which conclusions are advanced. The exposition is always lucid, and is occasionally enlivened by unexpected and apt quotation. Economists, to whatever warring sect they belong, should enjoy the book, and it is to be hoped that it will be widely read in this country.

C. H. P. GIFFORD

Edinburgh.

International Economics. By P. T. ELLSWORTH. (New York : The Macmillan Co. 1938. Pp. xiv + 529. 18*s*.)

THIS book is intended to " provide upper-division students with the theoretical equipment necessary to an analytical understanding of the phenomena of international economic relations and of the policies of governments bearing upon these relations. This object," the author very properly continues, " may be unattainable, and no doubt in part it is bound to be." It is obvious from the scarcity of good text-books on economics that it must be very difficult to write them, and no doubt most of us struggle with the temptation to try our hands. Every teacher has a favourite door to the enchanted world : there was a great day when we found the key : but each must find his own, and many will never find one at all. The problem is really to catch the student at a moment when he will realise that some proposition is significant and its demonstration compelling, and the inspired teacher must be something of a revivalist. But there are many approaches. To appraise a book of this kind is as difficult, on a small scale, as to write it, and both the book and the review are to a large extent personal statements.

Professor Ellsworth begins with a short history of the development of the classical theory of international trade, concluding with an exposition of this method as used by Professor Taussig. This is criticised as being rather cumbrous and unreal, and as having too much flavour of a real-costs theory. He goes on to expound the method used in Ohlin's recent book, which he prefers : this deals with international trade as part of the general economic structure, the interchange of goods taking place because of " the existence of differences between regions in the supply of productive agents." This approach requires a rather fuller treatment than he provides of the difference between " price-determined " and " price-determining " costs, and especially a discussion of the forces which fix marginal costs in equilibrium, such as forms the basis of Mr. Harrod's work. With adequate qualifications, both the classical solution and that of general equilibrium theory give the same results in explaining the existence of trade and the method of balancing, and Professor Ellsworth does not make this clear. This is only to say that a student who has grasped the fundamentals of economic analysis will have no difficulty with international trade, but that he ought to be reminded more explicitly than is done here of these fundamentals, and especially of the circumstances in which profits and factor prices tend or do not tend to equality.

These chapters, the first half of Part I, seem to be least successful. The remainder of Part I deals with the mechanism of adjustment, both on and off the gold standard, and is very well done: it brings out clearly the tendency of the prices of goods entering into trade towards similar levels in all countries, and the necessity of a balance as the primary determinant of equilibrium. There is, perhaps, insufficient stress on changes in the volume of employment as a balancing factor, especially as questions of employment receive a good deal of attention in Part II. The treatment of purchasing-power parity would need to be supplemented for the student who really wished to form an opinion about this question. On the whole, however, there is a good deal here which has not been available hitherto in such convenient form.

Part II deals with matters of policy, and can be warmly recommended, if only for the information which it contains on such matters as the nature of commercial treaties, quotas, and clearing agreements, for which special works have usually to be consulted. The author is almost too orthodox in his defence of Free Trade, a pleasing weakness; and I do not think that he is at all clear on the multiplier effect of foreign trade. He argues that tariffs are unlikely to improve the employment position except during their impact, which seems to go too far: they have an inflationary effect, and to that extent are bound to make some change unless costs rise as fast as prices. The strongest argument is that they can be used only once, but this is not the same as to say that their effects are temporary. There is no discussion of the rates of exchange of goods between countries each of which is acting monopolistically, a problem not exactly elementary, but one which is becoming increasingly relevant to the actual world. The concluding chapters deal with international monetary problems, and with national self-sufficiency as an object of policy.

In sum, I do not think that this is the book for the first essay. But once the student is launched on the subject, he will find a great deal which he ought to know set out clearly and sympathetically, and will have a guide who is both realistic and aware of the emphasis relevant to particular problems. If Professor Ellsworth has not quite attained his object, he has made a good attempt.

R. L. HALL

Trinity College,
Oxford.

Economics: a General Text-book for Students. By FREDERIC BENHAM. (London: Pitman. 1938. Pp. xvi + 488. 7*s.* 6*d.*)

WRITERS of text-books on economics are exposed to two main dangers: they may try to appeal to too wide an audience, and so produce a work which is not quite what is wanted by any one group of readers; or they may fail to strike the middle path between being old-fashioned and stereotyped on the one side and modern and controversial on the other. Perhaps no text-book can wholly escape these dangers. But Dr. Benham's book more nearly succeeds in doing so than any comparable work that has so far come my way.

First, it is frankly written for university students embarking on an honours course in economics. Such students require a predominantly theoretical work as their first text-book. For they must grasp at the outset, and before it is too late for them to change their university course, that theory is the bone and sinew of economic studies, and that nobody need hope to become an economist who is not prepared to wrestle with abstract and at times arid analysis. On the other hand, the theory they are to absorb need not be presented in too systematic a form, and it should be clothed with reasonably frequent references to current problems and facts, lest the student come to think of it as simply a form of intellectual exercise rather than as a means to a further end.

Dr. Benham seems to me to have combined theory, fact, and applications in exactly the right proportions. There is in his book no false simplicity of treatment, no specious elegance of style. His readers will realise that economics is a hard and at times a remote discipline, but they will also see its relevance for an understanding of the economic world in which they live. Dr. Benham claims, indeed, that the book is "realistic." But if by that is meant that it lays primary emphasis on factual and descriptive material, then it is not realistic—nor should it be if it is to serve the needs of those to whom it is mainly addressed.

Secondly, though the book makes no claim to incorporate original contributions to the substance of economic thought, yet it is thoroughly modern and up to date. We have had to rely too long upon text-books embodying ways of thought and expression which most of us have long since discarded in our own work, and which the student has had painfully to unlearn towards the end of his university course. It is well that he should learn *from the outset* to think in terms of relative preferences and scales of choice rather than of satisfactions and sacrifices, that he should

understand the meaning and importance of "liquidity preference," that he should know what indifference curves are, and so on. From this point of view, too, Dr. Benham gives him, on the whole, just what he requires; and all teachers of economics must be thankful that they at last have a book which they can put into the hands of their pupils with so few qualms of conscience.

But few of us will feel that Dr. Benham has solved the problem completely. In my view he is unnecessarily old-fashioned in one or two points—notably in his handling of pure international trade theory and of the problem of rent. And, on the other side, his treatment of pure value theory is one-sidedly Austrian, and does less than justice (again in my view) to the value of the Anglo-American tradition. I cannot feel happy about the complete neglect of embodied costs (called by Dr. Benham "real" costs), though I agree that opportunity costs deserve far greater emphasis than they have hitherto received in British and American text-books. Still less do I like the introduction of that mysterious and largely mythological concept the "sovereignty of the consumer." I cannot here enumerate my objections to this piece of apparatus. But perhaps its baleful influence is responsible for two rather glaring weaknesses in Dr. Benham's treatment of the problems of economic theory in the wider sense:—

(1) He is startlingly cavalier with regard to most of the factors which in the world as we know it prevent the main body of consumers from exercising their "sovereignty" to best effect: thus, advertising (we are told) "makes no fundamental difference" to the power and independence of demand schedules; the economic significance of inequalities of income is "a matter of opinion"; the list of forces which "militate against economic progress" does not include the suppression of inventions for the protection of existing monopoly profits.

(2) Apart from capitalism, only one type of economy is mentioned—that in which a central authority or dictator decides by his own fiat what shall be produced and how much each citizen shall consume. The reader thus receives the impression that it is only under capitalism that consumers can enjoy the rights even of a limited monarch; no hint is given of the possibility that a socialist community might employ a price system, and so allow consumers' demand preferences to play their full part in determining the volume and content of the national output.

Finally I may perhaps mention two matters of a verbal nature. On p. 15 the reader is told that in modern economic

writings "value means always value in exchange." On several subsequent occasions, however, "to value" is used in the sense of "to esteem." There is here an unnecessary—and in my experience a potent—source of confusion to the unwary reader. Since we most of us in fact do use the concept of esteem-value, in verb form if not as a substantive, would it not be well that we should explicitly warn our pupils of this usage? Secondly, "capital" is in pp. 140–142 defined in exclusively goods terms, though it is mentioned that for an individual it may include paper titles to future income, and though in an earlier passage (p. 33) it is stated that "money seeking investment is termed 'free capital.'" While I have every sympathy with the desire to exclude tiresome terminological matters from an introductory text-book, and indeed from more advanced books too—other than those specifically devoted to such matters—yet I cannot help feeling that the student would be better equipped for tackling the problems of capital theory if it were made clear to him that capital purchasing power and capital claims are concepts which not merely differ in content both from one another and from capital as a stock of goods, but which also play a not less important part than does the concept of capital goods in the analysis of value and distribution.

I have noticed very few misprints: the only one worthy of mention is that in which the printer attributes (p. 213 n.) to Mrs. Robinson a book on the "Economics of Imperfect Composition."

L. M. FRASER

King's College, Aberdeen.

The Social Function of Science. By J. D. BERNAL. (London: Routledge. 1939. Pp. xvi + 482. 12*s.* 6*d.*)

PROFESSOR BERNAL has written a most stimulating book, to which it is impossible to do justice in a short review. Economists will be particularly interested in the connections which he traces between science and the social environment in which that science finds itself. Professor Bernal is a good Marxist (dialectical materialism and all), and it is therefore the distortions and frustrations of science which particularly occupy his attention. Thus, science is lop-sided because heavy industry, thanks to its connection with armaments, gets priority in the scramble for funds for research. The Medical Research Council, we are reminded, gets a smaller Government grant than the Chemical Warfare (Defence) Department. Individual scientists, also, must keep on good terms with the powers that be, and make themselves acceptable

to those who hold the purse-strings. Again, the scientist is at the mercy of the manufacturer who supplies his apparatus. Readers of Professor Bernal's book who have been mulcted of several guineas for an X-ray photograph will be shocked to learn that, on his estimate, the cost of this service (including overheads) can rarely exceed three shillings. And, to mention only one further point in a long and formidable indictment, the pervasive and stultifying influence of our class-divisions largely deprives science, not only of the great reservoir of ability which our educational system leaves untapped, but even of the peculiarly valuable contributions which skilled and experienced laboratory assistants and mechanics have to offer.

If these influences stunt and distort the natural sciences, their effect upon the social sciences is a thousand times worse. Divorced from action (because the action to which they must lead would undermine the sources from which they are financed), the social sciences are, in the author's judgment, for the time being, doomed to sterility. But he is far from holding social studies, as such, in contempt. On the contrary, he believes that the most fruitful advances, during the next epoch of scientific inquiry, must come from researches in biology, psychology, and the social sciences. Indeed, one of the most refreshing qualities of this book is its largeness of vision and complete lack of specialist exclusiveness. The author firmly upholds the universality of the scientific method, and, notwithstanding his own indisputable eminence, he unblushingly declares that "science is easy," and he wants it to be both popular and democratic.

Professor Bernal believes, in fact, that we are witnessing the third stage in the social evolution of mankind. The first was the rise of society and the transmission of experience. The second was the rise of civilisation, based on agriculture and other specialised techniques. The third is to be the supersession of traditional techniques by science. In a fascinating chapter on "Science in the Service of Man," he gives us a glimpse of the kind of world which might emerge from this latest phase—a world in which energy is derived from coal, without anybody going underground to fetch the coal up, and in which roofed-in deserts become blossoming greenhouses. Like others who see Plenty round the corner, Professor Bernal is aware of the immense problems of social organisation which these possibilities raise. Apart from a general approval of socialism and of the Soviet experiment in particular, however, he does not tackle these problems concretely. It is fair enough that he should leave them to the

economists, and a heavy responsibility lies, accordingly, upon those economists who share his general attitude. (Incidentally, Professor Bernal's enthusiasm for the Soviet Union carries him rather far, when he compares Soviet with British expenditure upon research by converting roubles at the *official* rate of exchange.)

Such are some of the larger themes of this book. It is, however, no less remarkable for its many more immediate suggestions. Specially valuable are the author's comprehensive plan for rationalising the supply and distribution of scientific information; and the proposal that Universities should invest in their own instrument plants, instead of wasting money on buying their apparatus at retail prices.

BARBARA WOOTTON

London.

Industrial Price Policies and Economic Progress. By EDWIN G. NOURSE and HORACE B. DRURY. (Washington: The Brookings Institution. 1938. Pp. xi + 314. $2.50.)

Industrial Price Policies (a summary of *Industrial Price Policies and Economic Progress*, prepared by MAXWELL S. STEWART). (New York: Public Affairs Committee. 1938. Pp. 32. 10c.)

IN investigating the "dynamic aspects of modern industrial price-making," the Director of the Institute of Economics of the Brookings Institution has set himself and his associate a formidable task. They have concentrated their attention on "those business men who have accepted the challenge of finding ways of organising production so as to supply wants within the purchasing power of the workers who produce the goods." A policy of strenuous price-cutting is shown by a wealth of examples to have been very widespread in the United States, even where the predominance of a few large corporations might suggest the existence of a large element of monopoly. And it is the view of the authors that such a policy is very repaying. The distinction between the public and the private gain is not always made very clear. It is, of course, true that "the fact that industry nominally escapes the burden of supporting labour during its periods of unemployment does not mean that it goes scot-free" (p. 274). But from the point of view of the individual profit and loss account this is a negligible argument in favour of pushing sales by price-cutting.

It is, however, the view of the authors that virtue brings its own reward. A tone of healthy optimism pervades the book. The elasticity of demand, which determines the profitability of

a reduction of price, is regarded as high, at any rate in the long run, though no attempt is made to attach a value to it for any particular case. It is recognised that it is higher for the product of a single firm than for that of all the firms in the industry taken together. But even if the reduction of price applies to all the firms, the increase in sales is likely to be considerable. The existence of substitutes must not be overlooked. The "resourcefulness of modern technology provides substitutes which enlarge the consumer's ability to defend himself by switching to another commodity which may be quite unrelated in origin or even character to the product for which the high price is demanded" (p. 268). So that "all producers after giving the benefit of technological advance to consumers will win back part or all of it, or even an added advantage, through the expansion of sales—which in turn may permit of new economies" (p. 124).

The business man who reads this book is asked to choose between "short-run earnings" and "long-run efficiency and development" (p. 156). He is warned that "to snatch for the immoderate enjoyment of the moment's fruit means fatal disregard of the means by which future harvests may be assured and enlarged" (p. 267). But even the business man is likely to think twice when he is apparently asked to believe that any reduction of price which, the appropriate elasticity of demand exceeding unity, increases gross income (value of produce *minus* cost of raw materials) will necessarily increase net income (gross income *minus* costs of manufacture). The authors' statement that "the savings in unit costs resulting from expanded volume cause net income to expand more than proportionately to gross income" (p. 35) is, of course, true only if the elasticity of the falling average cost curve is less than that of the demand curve.

This is only one example of the absence of all theoretical treatment of the problem of pricing. The economist cannot be expected to regard as completely satisfactory such scanty references as the following: "In most cases . . . the manager has to exercise a constant care lest, with expanding volume, the price which he can realize fall faster than the reduction in cost which he can effect and thus stop his expansion of output while some of his capacity still remains unutilized. . . . From the percentage utilization which just keeps the company operating, every step forward up to practical-capacity operation thus entails a lowering of average costs and presents the possibility of lowering price as the means of stimulating market demand" (p. 95).

The book is to be recommended, however, for the numerous

examples drawn from American experience. The existence of the large corporation is shown not to preclude competition, and it is on "the battle between the giants" that the authors would rely for the most satisfactory attainment of a high rate of progress in which the community are allowed to share. The influence of the codes under the N.R.A. is dealt with, together with many other cognate matters. The chapters on "Economic Progress through Change in the Type of Goods Produced" and on "Large-scale Production in Relation to Cost" might well be referred to by anybody whose stock of text-book illustrations of these phenomena is wearing thin.

It is not stated whether the publication of a summary at a price of ten cents is intended to put the authors' ideals of price policy to the test of experience. Here at any rate is not a case where the producers "were so little concerned about making the consumer's dollar go as far as possible that they offered him only goods which were elaborated beyond what many consumers really wanted."

The ten-cent summary includes one thing which is absent from the two-and-a-half-dollar tome—an actual (though imaginary) arithmetical example of the increase in profits brought about by a reduction of price. In this example the profits of a manufacturer of wireless sets are doubled when he reduces his price from $60 to $50, but only because the volume of his sales is multiplied by two and a half.

R. F. KAHN

King's College,
Cambridge.

Government Price Fixing. By JULES BACKMAN. (New York: Pitman. 1939. Pp. xi + 304. 12*s.* 6*d.*)

THIS book is a comprehensive and highly critical survey of the major experiments during the war and post-war periods in the field indicated by the title. Its principal defect, in the eyes of an English reader, is the relatively slight space and attention devoted to such phenomena as the Milk Marketing Board, and to English experience in general, despite the fact that the author, in the course of his admirably documented record, shows himself to be intimately acquainted with the English literature of his subject.

The critical tone of the whole work is set in the preface; government interference in industry is an evil, only to be tolerated where the alternative is some specific and greater evil, the exist-

ence and the relative magnitude of which the operative government must prove. Thus, in the first two chapters, war-time experience of price control is passed in review, described with an admirable conciseness, and admitted to be of a qualified virtue, under two heads: firstly, because in the majority of cases the prices imposed were maxima, and, secondly, because in the general pessimism of war-time and in the absence of free resources, rising prices can hardly be expected to bring about the normal adjustment of supply. The author then proceeds to deal with price control, direct and indirect, which attempts to counteract forces making for falling prices. His chapters on the N.R.A. and the A.A.A., which are the best in the book, not only outline the steps which were taken and subject them to critical analysis, but show them in their context as part of the general policy of the "New Deal." Especially is this true of those price-fixing activities engendered or sponsored by the N.R.A. as an integral part of a move towards "capitalist syndicalism"; in part as payment for the improvement of labour conditions, in part as a weapon in the hands of the independent (and small) business man against the growth of monopoly.

Of the valorisation schemes, intra- and international, he has little good to say. He passes their record in merciless review, and against Mr. J. W. F. Rowe's qualified theoretical defence advances a well-supported case based upon administrative difficulties. Principal among these he places the diversity of interest between high and low cost producers, and in the most interesting theoretical chapter in the book examines at length the difficulties involved in accepting and defining "cost of production" as a basis for government price fixing, appearing as a whole-hearted advocate of the "bulk line" or marginal cost principle adopted by the U.S. war-time administrations.

With many of Mr. Backman's conclusions the present reviewer is in complete sympathy. Restriction of production as a cure for trade depression, the substitution of stocks of unemployed labour and capital for stocks of unsold products, is clearly retrogressive and indefensible. But it is possible to suspect the author of too great a respect for the adjustive processes of unregulated competition and too close an approximation of the world's markets to the concept of a perfect market. This emerges clearly in his distinction in the final chapter between the "ethical and political" motives of price control and the economic motives of the market. It also emerges in his treatment of the crop-cycle valorisation schemes. Most of the factors which have broken

these schemes have admittedly been those of the general trade cycle. Eliminate these, by hypothesis, and all that remains as reason for attempts to spread consumption and steady prices over the crop cycle is the necessity to reduplicate by artificial means those conditions which would be afforded by a perfect speculative market.

But this general attitude of the author is not an unfamiliar one, and it is one to which the reactions of economists will inevitably be coloured by their own preconceptions. For those who are in agreement with them, all the accepted criticisms of government intervention are here laid out, together with fresh evidence drawn from a very wide field, and digested into the most compact statement of the case with which the reviewer is acquainted.

HENRY SMITH

Ruskin College,
Oxford.

Public and Private Property in Great Britain. By H. CAMPION. With an Introduction by Professor J. Jewkes. (Oxford University Press. 1939 Pp. xvii + 138. 8*s.* 6*d.*)

THE purpose of this book is to ascertain how far the distribution of the aggregate wealth of the United Kingdom between public and private ownership has changed in the period from immediately before the War till the present date. It is a sequel to the earlier study of the Distribution of National Capital, in which was analysed the distribution of privately owned property among its possessors. Here the question, raised by Professor Jewkes in the Introduction, is taken up: Even if the private property of individuals is still unequally distributed, is public property, the wealth held jointly by individuals through voluntary organisations or the State, growing so quickly that inequality in individual ownership is becoming largely irrelevant?

Some increase in the proportion of public to private property might be expected if increased taxes and rates had on the one hand diminished private investment, and on the other been devoted to increasing public buildings and plant. At the same time there may have been an increase in property held by charities, which in this book are included in public property. Estimates of the relevant amounts have been made with great care and skill, and it is not the fault of the author that there is a large margin of uncertainty in most of the items; rather he is to be applauded because he has included these margins in every summary. While some additional light is thrown on the old problem of reconciling

the estimate of property derived from assessments from estate duties with that reached by capitalising income, the former is still unaccountably below the latter, unless very full use is made of the margins.

It has been thought best to exclude the value of roads and of armaments from property, on the ground that there is no valid way of estimating them. With this exclusion, the principal result reached is that " public property amounted to 6–8 per cent. of the total property of Great Britain in 1911–13, to 7–11 per cent. in 1926–8, and to 8–12 per cent. in 1932–4." Since, in fact, there has been a greatly increased expenditure both on roads and on armaments, part of the growth of the proportion is omitted. It can, however, be asserted that, on any reckoning, public property remains a small proportion of the whole, and that over the twenty years private property had increased at about the same rate as total private income.

It is emphasised in the Introduction that public control is much more extensive than public ownership. Thus, subject to various degrees of control, but not counted as publicly owned, are the British Broadcasting Corporation, the Central Electricity Board, the London Passenger Transport Board, Port Authorities, Railways, Gas Companies and so on, while the Government takes a hand in controlling production prices and wages in agriculture. State Socialism has extended in varying degrees far beyond State ownership.

We may suggest to Mr. Campion further problems which might yield results to further painstaking investigation. How much property is subject to different kinds of control? How many persons are employed directly by the State or Local Authorities (a fairly easy question), how many by corporations subject to control, how many subject only to wage control, and how many are free from any special regulations? There is perhaps no group of researchers better qualified to attack these problems than the Economics Research Section of the University of Manchester, which is responsible for the publication of this book.

A. L. BOWLEY

Haslemere.

Class Fertility Trends in England and Wales, 1876–1934. By JOHN W. INNES. (Princeton University Press. 1938. Pp. xvi + 152. Price $2.50.)

THIS study by Dr. Innes, a lecturer in Social Sciences at Columbia University, falls naturally into three sections: a brief

introductory chapter on the course of fertility in England and Wales as a whole (pp. 1–19); a detailed study of the trends in fertility for different social classes so far as it can be carried on the data of the Census of 1911 (pp. 20–69); and a concluding section on recent trends so far as they are illuminated by data for London and the adjacent urban areas (pp. 70–123).

The second section could hardly be expected to lead to any very novel conclusion, but it is a detailed and careful study. Up to the end of the period to which the fertility census of 1911 carries us "in both absolute and relative terms, the fertility trends of the social classes were spreading farther and farther apart" (p. 69). The interesting and important question is, what has been happening since those days?—and it is a difficult question to answer owing to the imperfection of our data. The problem cannot be attacked directly because comparable data as to the fertility of different occupational groups do not exist. Dr. Innes has chosen a path utilised by some previous writers, notably Heron; investigating the changes that have taken place in the fertility of London Boroughs, and Urban Districts in the neighbourhood of London, after grading these areas by social status. As comparative periods were chosen 1909–11, 1922–24, 1931–33; three-year groups being adopted to minimise any peculiarities of the individual year, and epochs judged to be fairly comparable relatively to the economic cycle; some data are also included for 1934. The number of areas taken was increased to thirty-nine, available for the whole period, and fifty available for 1922–24 to 1931–33 only. Classification by social status seems distinctly better than anything hitherto attempted. Fundamentally it is based on a combination of three distinct indices: (1) female domestic servants (indoor) per 1,000 of the population in "private families" (for the thirty-nine districts) and per 1,000 of the population (for the fifty districts); (2) males in professional occupations per 1,000 occupied males, and (3) males in commercial and financial (including clerical) occupations per 1,000 occupied males: but before the final grouping into classes other information, *e.g.* from the London Survey, is taken into account. Five classes were adopted, of which I is the highest and V the lowest on the social scale. The general conclusion reached (p. 123) is that by 1931–33 there were "but small fertility differences between four of the five area-classes, with one class, III, falling below a fertility level corresponding to its status, and with Class V's relative fertility still exceeding the other classes by a wide margin." There has been, in fact, a high degree of equalisa-

tion. The brief interval 1931–33 to 1934 showed rather an abrupt further change, the fertilities of Classes I and IV, and of classes IV and V, both closing up rather sharply. So sharp a movement needs later data for its interpretation.

The memoir might perhaps have been lightened to advantage if quite so much detail had not been given—it reads a little as if the author had put in all his own notes—but it is a careful, critical, and useful study. The unfortunate statistician has at present to waste an immense amount of labour in the endeavour to surmount the deficiencies of our data, and deficiency-dodging is bound to be rather tedious to the reader who mainly wants results. The statistician of the future, when the Population (Statistics) Act, 1938, has been in force for a decade or so, will have a much easier task.

G. UDNY YULE

St. John's College,
Cambridge.

Report on the British Health Services. Political and Economic Planning. (London: P.E.P., 1937. Pp. 430. 10*s.* 6*d.*)

THIS is one of the best reports issued by P.E.P. The subject is one which should long ago have received the attention of a royal commission, and it is a tribute to the organisation and ability of P.E.P. that it has been able to accomplish by its own resources almost as much as a commission might have done. Over two hundred different persons and organisations supplied material or revised drafts for various sections of the report. It has a special interest for economists. It is impossible to condense the material, analyses, and proposals made in its 413 pages, and therefore this note is confined to certain salient subjects.

The report emphatically vindicates the call for the planning of the social services. Planning in this respect means nothing more than the determination of a principle of action which can be applied to secure the co-ordination of branches of what is really a single service. Owing to a peculiarly fortuitous history, these branches have remained separate, and, though having the same final object, yet act without co-ordination, indeed, frequently with mutual frustration.

It needs a principle to make it possible to secure coherence of purpose and appropriately integrated agencies. Such a principle is enunciated on page 395 of the report:

> "It is important therefore to outgrow the attitude of confining the term health services to what are really sickness

> services. The nation needs sickness services, but a nation which regards them as a substitute for health services of the type described above is going to find the confusion expensive in money and in suffering. . . . It is a condition of an adequate national health policy that the whole range of national activities which have any important bearing upon health should ultimately be scrutinised and overhauled from this standpoint. Every agency able to help in promoting good health should be examined and enlisted in the appropriate manner in order to ensure that the utmost benefit to health results from its everyday operation."

A survey in the light of such a principle has hitherto been difficult to achieve because the health services, private and public, publicly financed and "voluntary," have become sectional and rooted in vested interests. Again, there have developed so many branches that the very confusion makes it impossible for any dominant organisation to stand out and make its will felt over the whole.

The magnitude of the total sums spent on health is surprising, and forms a considerable part of the total national expenditure. Summarising a careful and conservative estimate the report comes to this conclusion:

	£ millions
Value of work lost through sickness, at least .	100
Treatment and maintenance of sick persons .	185
Public expenditure on prevention of ill-health	13
Public environmental services which largely contribute to good health . . .	104

This sum of £400,000,000 is furthermore an indication, though not the measure, of the continuous debility for which treatment cannot be afforded, or which, while incapacitating people to the extent of impairing their full efficiency, does not result in an actual visit to a doctor or one of the public-health institutions. No one has yet been able to discover a method of estimating what this may mean to economic productivity. Analyses of the causes of sickness (by samples) show that one-third of all cases treated come under the common cold and its developments, and there is no doubt that as research has failed to discover a method of rendering people immune from infection resulting in bronchitis, tonsillitis, influenza, etc., some kind of social organisation should be established or discipline inculcated. Nor is there any doubt that the 10 per cent. of sickness due to digestive complaints could be diminished by more attention in the schools to the preparation of food, especially in working-class homes.

The amount of money spent on the health services mentioned above flows through a variety of health agencies, variety without plan, variety sometimes with mutual obstruction, variety with gaps. There are the services for the treatment and maintenance of the sick falling into public, "voluntary,"[1] national health insurance, other insurances, sickness pay, specialists, dentists, expenditure on workmen's compensation, private doctors (general, specialist, dentists), and masseurs, and on medicines, and within each of these principal groups there are varieties each catering for publics of different age, class, sex, and occupation, with the minimum of co-ordinating mind to see that they are turned to the maximum usefulness. It might be added that the services administered by the 2,000 local authorities are, as to area of administration, very deficient, and as regards provision of institutional aid and personnel, very unequal, due to inequalities of finance, public spirit, understanding, and excessive local "patriotism."

P.E.P. therefore suggests a thorough overhaul with two principles as standards, first, that the health services should be regarded as preventive rather than curative, and second, that the concern of the services is not merely the remedy of full ill-health, but also the conquest of mere debility. This of course requires two instruments: finance and machinery of government. As regards finance the report urges: (1) that the very provision of the services depends upon the money available, and (2) that the provision of the right personnel is now too dependent upon the family's ability to support students while they acquire their training and diplomas. It looks to a much more extensive provision of services by the State. The alternative methods of financial provision to replace the present private payments to general and special practitioners, subscriptions to voluntary agencies, and the compulsory arrangements under national health insurance, are reviewed. The report concludes with the advocacy of "full inquiry into the possibilities of wider compulsory contributory schemes levied on the beneficiary classes. . . . These classes give evidence of ability and willingness to pay for suitable protection upon easy terms." They propose a flat rate of contribution from each worker, coupled with a system of allowance and treatment for dependants.

As regards machinery, the report makes detailed proposals regarding the central and local administration of the public

[1] The Report uncovers much insincerity and waste in the so-called "Voluntary" Services.

services, and regions much larger than the present local areas would be the basis. They look to the general practitioner as the first line of defence and treatment, and also the guide of the individual to the various branches of the health services which will deal best with him. If all this requires a greater expenditure, the report believes it will yet be worth it, because socially it will produce a more robust and happy nation and economically a more productive one.

HERMAN FINER

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Report on the Location of Industry in Great Britain. Political and Economic Planning. (London: P.E.P. 1939. Pp. 314. 10*s.* 6*d.*)

IN the introductory section of this Report the reader's attention is drawn to the fact that the work of the Group which has produced it is complementary to that of another Group, on Regionalism, which will not report for some time to come. It is thus somewhat difficult to evaluate the present work, and conclusions reached from a study of it alone may be subject to modification when the future volume appears.

In contrast to many of the other Reports issued by P.E.P., the present subject is one which, in its range and complexity, is peculiarly likely to reveal the weaknesses of the technique of investigation adopted. The Report falls into two parts, the first of which (Sections I to VII) deals with " the problem " and the factors which create and influence it—although there is, in fact, a whole series of problems, some mutually conflicting. There is here presented a great deal of information; unfortunately there are few general conclusions which emerge, and the impression left on the reader is of a great mass of unassimilated detail, without any unifying theme to guide him through it.

This is true of each section individually as well as of the whole. Thus, a description of the " Present Location of Industry " uses most of the official data necessary for such a picture, but does little more than reproduce a series of different statistics. In particular, Professor Sargant Florence's coefficients of localisaton are given (with an elaborate Table and a special Appendix) but their implications are not discussed, nor is any further use made of them. When the " Factors of Location " (Section III) are discussed, there is a comprehensive selection of possible factors, but there is little attempt to estimate their relative importance, apart from a somewhat uncritical use of the data given in the

Board of Trade *Surveys of Industrial Development*, and the inclusion of a few actual examples, mostly of a "text-book" character.[1] The result is completely inconclusive; the major factors are described, but they are accompanied by many others (such as the avoidance of sites liable to snowdrifts) reminiscent of the White Knight's desire "to guard against the bites of sharks." A chapter on Trading Estates describes those which exist and their attraction to the entrepreneur, but fails to make the obvious point (indicated in the Evidence of the Ministry of Labour before the Royal Commission) that their value remains only so long as the supply is strictly limited. Defence and location is dealt with separately—a useful chapter, but the subject remains in its own compartment. The effects of a high degree of localisation of industry (Section V) seem to be regarded mainly as undesirable, and to take the form largely of depressed areas, the need for movements of population, and the evils of industrial concentrations.

Some of the material is useful, but much of it is presented uncritically and must be used with caution. The absence of any set of principles is the great weakness, and one which means that there must be a very big jump from diagnosis to the prescription of policy. On one major point, that of the comparative effects of *laissez-faire* and State control of location on economic efficiency, this is of special importance. The three possible views—that location is a matter of indifference for efficiency, that *laissez-faire* is the better way, that the entrepreneur needs guidance and control if he is not to cause a vast amount of damage—all appear to be held in different places. The first is implied in the analysis of certain factors in location (*e.g.*, pp. 56–8), the second in such points as that "considerable difficulties will arise if the delicate machinery of costs is abruptly disturbed" by defence measures which involve new situations for plants (p. 178), while the last is stated explicitly in dealing with the objects of industrial policy (pp. 212–13).

We find, however, that the precision with which the lines of policy are laid down in the second part makes a striking contrast with the diffuseness of the previous discussion. The first step is to indicate the need for "Balanced Regional Development." Here there are several criteria suggested. One dominant theme is the need for diversification of industry in various regions, for

[1] In one of them relating to the costs associated with different situations for a cement plant, taken from Holmes' *Plant Location*, it is not mentioned that the figures were "manipulated" to reinforce the illustration.

not only does " specialisation " of an area involve the possibility of severe depression, but it also has other disadvantages. It is, of course, quite true that the depressed areas are those associated with a narrow range of industries, but it is a big step from this fact to the conclusion that a policy must aim at diversification.[1] The issue is greatly over-simplified by the posing of a simple antithesis between diversification and specialisation. Further, nothing is said of possible loss of efficiency which could result from the breaking down of localisation.

Of great importance is the proposal that different areas should be treated in different ways. This, for example, should be axiomatic in any policy designed to deal with the depressed areas. The Report, however, goes further than this, and proposes a classification of regions; there is here scope for wide divergence of opinion.

The specific aims of industrial policy (Section IX) are a peculiar mixture of very broad proposals (such as " the co-ordination of the State's many activities affecting industry and economics ") and detailed suggestions for specific reforms, such as measures to deal with publicity, adjustment of local rate charges, provision of parks and playing-fields, and so on. The basis of most of these specific proposals seems to be a desire to reduce any inequalities in the attractiveness of regions for entrepreneurs. Along with them goes some " devolution " of administration, again inspired by this motive. This may be desirable on other grounds, but it is not closely related to the plans for guiding and controlling location which follow.

As could be expected, the basis of such plans is the appointment of a Commission, " to promote dispersion, diversification and devolution." It will appear from what has already been said that it is doubtful whether adequate grounds have been advanced either for specifying these ends or for determining the criteria by which to judge the means to them. Apart from this, the form proposed presents many difficulties of administration. For example, the Commission is to have fairly wide powers of compulsion, and to be free to deal not only with location in the specific form of granting licences to entrepreneurs to establish plants at particular places, but also to " consider and report on the effects regarding industrial location of national policies, such as, for example, tariff policy and trade agreements "—presumably in the expectation that its views would have some effect on policy.

[1] Cf. R. C. Tress, " Unemployment and the Diversification of Industry, in *The Manchester School*, October 1938.

The lines along which the Commission should work are laid down in some detail. Here there is again a certain amount of inconsistency, resulting from a mixture of proposals for control of various features so as to achieve particular objectives and a desire to leave some elasticity. Thus, although the Commission is given powers of compulsion, there is also to be the provision of "deterrents" as well as prohibitions, and there also may be inducements. Does this last item creep in through a fear that, after all, location may be an important matter for a firm's efficiency? Again, the Commission is to do a great deal in the way of preventing all the evils which result from freedom of choice of the entrepreneur, but we are told that "it is not anticipated that the licensing system need prove to be more than a formality in the case of at least 80 per cent., and probably 90 per cent." of new plants established.[1] Perhaps the evils are not so bad, nor so general, after all. The extent to which new development might be discouraged by measures of compulsion is a matter which cannot be exactly determined; but the fact that so much development is growth from existing structures (a point noted elsewhere in the Report) suggests that the influence of compulsion may not be negligible. Certainly it is a mistake to assume that there is a fixed amount of enterprise which can be directed where one will. This is allowed for in stating that the Commission would not follow "hard and fast" rules; but this must diminish the effectiveness of the Commission's policy. Further, when dealing with the factors to be considered in deciding whether compulsion should be exercised in particular cases, the criteria given are of the vaguest, and qualified by numerous phrases such as "as far as is known."

It would be possible to multiply points of this character, but it is clear that the suggested scheme has much that can be criticised in its positive proposals. In addition, there are many difficulties which have been overlooked. These relate to such matters as the difficulty involved in the prohibition of development in an area which has unemployment, though perhaps not so much as other areas, the difficulties of applying a policy of diversification when it must be applied in terms of individual firms and not of "industries" (which are abstractions), the possible incompatibility of different objectives of policy (*e.g.*, development of the depressed areas may conflict with the ideals of town planning), and so on.

To believe that it is not yet possible to formulate a scheme of planning is not to believe that all is for the best. No one can be

[1] It would be useful to know on what basis this estimate is made.

unaware of the evils which exist under present conditions, and it is certain that there is room for much more bold experiment than has yet been attempted. This Report may be welcomed in that it is a plea for the establishment of a more conscious and comprehensive policy; but its own diagnosis is confused, and the remedies it suggests savour too much of a preconceived plan, based on a belief that the need for control is axiomatic, to warrant its being regarded as a guide to policy.

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The Land of Britain. The Report of the Land Utilisation Survey of Britain. Edited by L. Dudley Stamp. (London Geographical Publications Ltd. Part 70 : Norfolk. 1938. pp. 169. Part 79 : Middlesex and London Region. 1937. pp. 187. 4*s.* each.)

SINCE 1930 Surveys have been made of every county of England, Wales and Scotland by an army of volunteer helpers, working on six-inch maps. These maps, reduced to one-inch scale, are being published in colours representing type of cultivation, together with reports, of which the two under review are excellent examples. Each report gives an outline of the geographical background, including geology and soils, topography and climate. But the main interests of the reports are the distribution of the different types of crop (including houses) in the past and the present, and the different land-use regions into which the county can be divided.

Both these interests present important aspects to the economist. The distribution of a crop may and does show distinct localisation within a county, according to the comparative efficiency of the soil or site. Sometimes a conflict may arise between soil and site : west of London in the Thames plain are found some of the best soils for market-gardening, but " the eastern or Londonward end of the region is almost completely obliterated by a series of towns which merge into one another " (Part 79, p. 194). The Middlesex and London volume is especially important as describing the encroachments of the Great Wen. The author, Mr. E. C. Willatts, is the Organising Secretary of the Land Utilisation Survey for the country as a whole. He was born and reared in the heart of one of the few remaining agricultural portions of the region, the son, grandson and great-grandson of farmers in the area. Only occasionally do his feelings burst forth when describing the growing utilisation of land for houses with gardens (p. 168) or for

entirely non-agricultural purposes (p. 171); but Mr. Willatts' case would have been strengthened if he had stated more clearly to what precise regions the development of building with or without gardens should have been relegated.

In the strongest contrast is Norfolk, with its more normal distribution of the population in three largish industrial and seaport towns and many smaller market towns (p. 186) "situated about 7 to 10 miles apart, usually on a main road." Here the distribution of the beet crop—among the twentieth-century importations to which a special section is devoted—presents a nice economic problem in relation to the distribution of beet-sugar factories. "From the standpoint of factory costs it is agreed that factories with a large capacity are the most economical provided they can work for a full campaign at a figure approaching the capacity; from the standpoint of the growers the cost of transport from field to factory may be the deciding factor between profit or loss" (Part 70, p. 251). Presumably, since the beet-sugar crop is (Fig. 49) fairly scattered throughout the county, the grower would prefer more and smaller factories.

The descriptions of the characteristics of different land-use regions also contain much to stir the economist. There is an admirable chart to illustrate the rotation among fourteen crops in some thirty fields of a Norfolk Good Sand Region farm (Part 70, p. 218), and in the Chiltern beechwood region (Part 79, p. 177) there is an arresting account of the recent displacement of the "bodgers," or hand turners of chair-legs, by the Wycombe power-lathes. The Norfolk volume is especially important as describing regions of high farming, and it is interesting in this connection to notice from a map (p. 144) based on past tithe surveys, the growth since 1840 of arable in the eastern fen areas as against a decline for the rest of the county. A Cambridge economist, used to parading the Breckland beyond Newmarket as an accessible object-lesson for pupils of truly marginal land, is relieved to have it confirmed (p. 225) "that in this region thousands of acres are cultivated only when prices of corn are high, and that the land goes out of cultivation again when prices fall." The author of the Norfolk report is Mr. John E. G. Mosby, who, largely with the help of Scouts, Rovers and old boys of his own school, organised and controlled the survey of the 700 parishes of the county from beginning to end.

The reports are provided with admirably clear maps and letterpress. The economic historian should be particularly grateful for the juxtaposition of maps showing the position at

different dates. In the Norfolk report the chapter on land utilisation contains much authoritative detail of the histories of particular estates and farms. Altogether these reports form an indispensable and fascinating reference work for the economist whose thought is not too far removed from problems of the land and its use.

P. SARGANT FLORENCE

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The Management of Labour Relations. By GORDON S. WATKINS and PAUL A. DODD. (London: McGraw Hill Publishing Co. 1938. Pp. xviii + 780. 24*s.*)

THIS work was originally undertaken as a revision of Watkins' *Labor Management*, published in 1928 and reviewed in the ECONOMIC JOURNAL for March 1931; but the "new problems and situations which have emerged in the interim" have forced the authors, as their preface tells us, to write for all practical purposes a new book.

This falls into five main parts, dealing with personnel management, the psychological aspects of labour relations, the technique of selection and placement, the maintenance of personnel and, finally, joint relations and collective bargaining. Maintenance of personnel is the longest part. It deals with measures of success in maintenance, such as labour turnover, absenteeism and the accident rates; and with conditions underlying success, such as wages systems, methods of promotion, training, hours of labour and physical environment. There is also a systematic and useful bibliography.

While incorporating (p. vii) "the latest available information on significant changes in industrial relations and the techniques that have proved effective in meeting such changes," the authors might have been well advised to cut out more of the older material. A great deal of the information is out of date or second-hand. Business men's opinions are quoted, such as the late Lord Leverhulme's views in 1918 about the six-hour day, while the solid facts disclosed and measured by Dr. Vernon and other investigators for the Industrial Health Research Board are ignored. The authors do not make much use even of the American original sources, such as Public Health Bulletin No. 106, or the work of Elton Mayo and North Whitehead. Surely a long and detailed book such as this should familiarise readers, whether they are students or practical executives, with the first-hand, scientifically-

sifted material rather than with *obiter dicta*, often somewhat platitudinous.

The authors may contend that it is their main task to present the actual policies or techniques in industrial relations rather than the scientific conclusions on which such policies might be based. But even here the mere description of policies is often confusing, and sometimes inaccurate. Describing payment of wages by sliding-scales, the authors jump most disconcertingly from scales based on price of product to scales based on cost of living; in any case, whichever basis is referred to, it is not true to say (p. 352) that "growing opposition of trade unions . . . has resulted in the almost complete abandonment of the sliding-scale in British industries." The whole discussion of the wage-setting process is somewhat erratic and lacks the clear step-by-step description set forth, for instance, by Z. C. Dickinson (unfortunately referred to in the bibliography as Dickson) in his *Compensating Industrial Effort*. The authors show a similar vagueness (pp. 670–6) in deciding whether they are discussing Whitley National Joint Councils, or Works Councils and Committees.

Excellent chapters, up to date and informative of the costs and factors involved, are those on Labour Turnover (XIII) and Absenteeism (XIV), though it is curious that there is no reference in the index to Strikes or Disputes except among railway workers. English readers should be particularly interested in the account (Chapters XXI and XXII) of methods of training employees and executives, in the summary (Chapter XXVIII) of the American Social Security Act, and (at the end of Chapter XXXII) in the description of types of employer–employee dealing before the New Deal. There is a special chapter (XXXI) on Labour Relations in the Civil Service, and a final chapter of conclusions on personnel management which is very sensible.

P. Sargant Florence

University of Birmingham.

Technical Progress and Unemployment. By E. Lederer. (Geneva: International Labour Office. 1938. Pp. xi + 267. 6*s*.)

This publication of the International Labour Office is not the usual type of "green" book. It is not in the nature of an official report, but an attempt to assess on a theoretical basis the amount of unemployment due to technical improvements in production. Technical improvements are carefully distinguished from inventions. The latter are new ways of spending money,

like wireless sets and motor-cars; they produce additional consumption and do not create unemployment. It is only the effect of improving the technical methods of producing existing articles of consumption that is Professor Lederer's problem.

The theoretical model used is somewhat realistic. A harmonious development is assumed—though booms and depressions are often referred to. We are given a certain proportion of dynamic firms which tend to push out the static firms and to render their workers workless. Costs of amortisation and some unused capacity are allowed for. Professor Lederer shows (Chapter III) that the fact of unused capacity makes unreal the normal assumption of diminishing returns to labour in the short period, since labour is not being added to a capital whose use is fixed. Assuming as Professor Lederer does—though this in its turn is unreal—that the capital used and unused is of equal efficiency, diminishing return is certainly difficult to prove, and failure to absorb an extra quantity of labour cannot be attributed to the maintenance of real wages in the face of non-existent diminishing returns, but (p. 7) " is due to the impediments to an expansion of production inherent in the capitalist system." Indeed, the remedy of unemployment by lowering wages is assumed as impracticable since it ignores " the lower limit below which wages, or the cost of human labour, cannot be allowed to sink " (p. 13).

Given these assumptions, proof then proceeds by arithmetical stage-by-stage examples rather than algebraic or geometrical reasoning, to the effect that in the short and medium run reabsorption of the technologically unemployed is either impossible practically, or involves too great sacrifices in social welfare. The sub-title of this work is an "Enquiry into the Obstacles to Economic Expansion." Professor Lederer admits that " technological unemployment is a medium-term phenomenon " (p. 12). If it is not technical progress that is the lasting factor in unemployment so much as certain obstacles to ready re-absorption of the unemployed, to harmonious development, and to the proper distribution of workers, he should perhaps have concentrated more on discovering precisely what these obstacles are. If these impediments are " inherent in the capitalist system " he might have detailed, as he adumbrates in an all-too-brief four pages of his Summary, how in its stead a planned system would cope with technological unemployment.

Only an occasional attempt is made at a statistical testing of the thesis advanced, but Professor Lederer's formulation is certainly helpful toward inductive verification. His arithmetical

examples show the sort of facts that require to be collected and prevent our being " tempted to console ourselves with the thought that a final state of equilibrium is mathematically conceivable once we can prove that for social reasons the achievement of this equilibrium is impossible " (p. 13). He urges the significance of the ratio of capital to labour rather than the length of production as a measure of capital structure—an index statistically certainly more easily obtained. To explain the relative depth and permanence of unemployment to-day, Professor Lederer is inclined to lay stress on a more rapid growth of technical improvement as against consumer's invention in the twentieth as compared to the nineteenth century. " Technical progress (p. 4) is to-day concerned very largely with the solution of different problems, in particular that of cost reduction, and only to a minor extent with the creation of new industries." Here again the question of fact is raised, which can surely be verified one way or the other by inductive methods.

The main text is not always very clear and occasionally there is some awkward phrasing and (on p. 169) a transposition of tables. A grasp of the argument is therefore much helped by the generous summary that precedes the text, and from which quotations have been made, even though summary and text sometimes seem to part company. Professor Lederer's " dynamic " assumptions show a feeling for the real facts of modern industry as they affect technological unemployment. Let us hope he will be enabled to implement his suggestions (p. 20) for realistic research that may " clarify this question."

P. SARGANT FLORENCE.

University of Birmingham.

Labor in the United States. Basic Statistics for Social Security. By W. S. WOYTINSKY. (Washington: Committee on Social Security of the Social Science Research Council. 1938. Pp. xiv + 332. $3.50.)

THE passage of the Social Security Law by the United States' Congress and the enactment of Unemployment Insurance laws by the several states make it necessary, for both actuarial and administrative purposes, to have available types of industrial, occupational, and employment statistics not hitherto published. The returns of the various Censuses are deficient in several important aspects—for example, they make no clear distinction between employers and employees, and fail to show the distribution of employed workers by age and sex.

Dr. Woytinsky has gone back to the raw material of the Censuses of Population, Agriculture, Mines, Manufactures, Construction, Distribution, and Business, and has re-classified and re-tabulated it so as to satisfy these new needs. His figures apply to the whole of the United States, but the methodological discussions will be of considerable help to State administrations in applying their own legislation. The findings are admirably presented, and the methods of procedure and conclusions are expounded with the clarity of a master of the subject.

The summaries at the head of each chapter are lucid and precise; and British readers, who are not especially interested in many of the detailed findings, will find the explanatory notes on United States statistical data and the summary tables very useful for future reference or comparison. They will also derive profit and pleasure from observing Dr. Woytinsky's handling of technical problems. His use of statistics of age distribution to study the mobility of labour between occupational groups is very interesting and suggestive. It throws valuable light upon shifts between insured and uninsured occupations, and shows that before long old-age insurance will in fact be extended to agricultural workers, though the pensions they receive will not be large, since they must be proportioned to the amount of their earnings while they were in insurable employment. The number of persons entitled to insurance payments will grow much faster than the number for whom contributions will be paid. The former number "will probably not be less than 12,500,000 to 13,150,000" in 1980. Another example of felicitous technique is the application of the method of interpolation to the problem of breaking down the census categories of size of establishments so as to suit the requirements of State unemployment insurance administrators. But perhaps sufficient has been said to indicate that the book is of value to all students of industrial statistics as well as to the Civil Servants of Dr. Woytinsky's adopted country.

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Kaufmännische Betriebswirtschaftslehre. By E. WALB. (Leipzig: A. Glöckner. 1938. Pp. xii + 552. Rm. 14.80. Outside Germany, Rm. 11.10 (19*s.*).)

THIS revised edition of the well-known handbook of business administration is obviously destined to become the new standard text-book—to be read and studied by Germany's commercial students and clerks dreaming of the *Generaldirektor's* staff in

their knapsacks. It possesses abundantly that supreme qualification for this purpose: thoroughness, even to the minutest technicalities. From psychological arrangement of work down to the use of an adding machine, from devaluation to the monetary system of Albania, from the purchasing-power theory to an explanation of logarithms. The reviewer racked his brain to discover one question, however wildly improbable, which the business man in the "lower managerial sphere" might come across in his general office routine and for which this book does not provide an exhaustive answer; there is none. A quantitative measure of this thoroughness is the index which contains, at a conservative estimate, some 3,000 references! One can only marvel that this material should have been collected, sifted, set out by one human brain.

As a reference book, it is incomparable. But if one imagines that it is to be used as a text-book, one feels in the same slightly unreal atmosphere as in a Business Efficiency Exhibition. Somehow, all this possible efficiency in detail seems unobtainable in the real world, it even seems incongruous with that aura of hazardousness and haphazardness surrounding major business decisions, of which most competent observers tell us. Indeed, one may become sceptical of the value to students and business men even of an attempt to assimilate a portion of this knowledge of detail. For it can perhaps only be at the expense of general economic knowledge and of technical knowledge of the commodities dealt in.

All the reviewer can hope to do is to pick some few points in this book which may be of more general interest to those readers of this journal who cannot undertake to work their way through it themselves. The author is on the whole sceptical about the rate of interest as an important cost item of new investment, and this result agrees with those obtained by Oxford economists from business men. The "overhead costs" are very happily retermed and appear as "cost of readiness." But when advertisement is treated as essentially fixed cost, this is at least for a sector of English business life (the department stores) disproved by the results of Professor Plant's and Mr. Fowler's studies which rather justify the treatment accorded to advertisement by economists as "costs of selling additional output." Of particular interest are the methods of "budget accounting" of firms—*i.e.*, planning of the balance sheet for a year ahead; according to the author, this is a spreading habit in German business conduct. The difficulties the author encounters in defining concepts such as "profits," "dividend earned on the capital invested" for

purposes of accounting will strike a sympathetic chord among economists. It is also interesting to find that a proposal is advanced to account in units of stable value rather than money in periods of changing prices. In connection with this, firms are admonished not to hold back from selling during falling prices for fear of the inevitable book losses. From the same hesitancy to "cut losses" he explains how the general investor is "dished" by the professional speculators at security and commodity exchanges.

There remains to add that some interesting sidelights are thrown on recent economic trends in Germany, such as the wide spread of vocational guidance tests in staff selection, or the reintroduction of piece-rate wage systems after the last depression. There are also comparisons between English institutions and their German equivalents (accountancy methods on pp. 70 and 71, building societies p. 330, capital issues p. 357) which will repay a selective reading.

It is, perhaps, the inevitable obverse of its overwhelming thoroughness in detail that Professor Walb's book can hardly be described as up-to-date. It is clearly based on the conditions and legal situation of 1931 or 1932 (it does not employ the neo-German terminology of business "leader" and "follower"), and a scrappy "supplement" of sixteen pages does not provide more than a few footnotes on the sections that are most obviously obsolete; but perhaps this is a book which nobody could bring himself to rewrite.

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Co-operation at Home and Abroad: Vol. II, 1908–38. By C. R. FAY. (London: P. S. King. 1939. Pp. x + 540. 18*s*.)

MR. FAY'S book on Co-operation in various countries, published in 1908, has remained a standard work within the field which it covered. It was, however, becoming out of date, and, by widening his experience in Europe, Asia, and New Zealand, Mr. Fay has equipped himself for a further analysis of the co-operation movement and for a re-statement of his views. Two sections of the present volume, the theoretical chapters at the beginning and the supplement on agricultural co-operation at the end, are first-class. It is possible to disagree with the author's opinions: for instance, with his rejection of the statement that Fourier was concerned mainly with the rights of producers and Owen with the

needs of consumers, or with his evident belief that the frontier between organisations of producers and those of consumers is "unessential," but Mr. Fay makes his position plain, and stimulates thought in those who disagree. He would perhaps submit to be called a co-operative pragmatist, who welcomes co-operation in any form which responds to the environment of the people who practise it, but is liable, so it may be critically suggested, to lose sight of the fundamental principle which underlies the forms. The national value of a co-operative system means more to him than its conformity with rules hitherto accepted, and he is untroubled by co-operative dealings with non-members (*e.g.*, the sales of C.W.S. products to the Indian public), the alliances of Scandinavian co-operators with their non-co-operative rivals, the absorption of co-operative bodies in an authoritarian Corporation, or even the compulsion which is the essence of a Russian collective farm. "It seems fair to class it as an advanced form of co-operation!" (p. 525).

All this is worth saying, whether it be right or wrong. Compulsion in economic matters has come to stay, and co-operators must make up their minds whether compulsion is an enlargement of co-operative activity, extending its bounds until they embrace the entire community, or an infringement of co-operative rules (as ordinarily believed hitherto), to which supporters of voluntary action must bow because they lack power to prevent it. The reason for Mr. Fay's acceptance is apparently his desire for co-ordination (that blessed word!), and some of his most instructive passages are those in which he illustrates, in one country or another, the relations between the respective organisations of consumers and producers, and the combination or "tie-in" of functions in a single body. The frontier between the two sides of the movement is unstable, and it is not always quite clear from Mr. Fay's description where it lies, or whether the co-ordinating or co-ordinated body is still co-operative. The Swedish system receives special praise, and co-operative spirit and intention obviously govern all the component parts of it; but the only co-ordination which is visible is the union of many tangled strings. This is not to depreciate the Swedish system, which serves the national purpose very excellently but quite unmethodically. It works, because of the pervading co-operative spirit, and the reason why the Kodinar system in India, combining credit, sales, and supply in a single organ, will not work without detriment to that country, is that it crushes the co-operative spirit. Mr. Fay refers to the strong criticism directed by Indian co-operators

against the attempts of financial interests to impose Kodinar "co-ordination" upon them.

The chapters dealing with particular countries are interesting, but of varied quality. It was not possible for the writer to examine and describe all that he saw in equal detail. There is, however, always good material, and those who ask for more may reasonably be expected to study the original authorities. The information and the theoretical comments in this book are enough to make it indispensable to every good library and every serious co-operative student. The final chapter gives in the space of fifty pages a better account of agricultural co-operation in Europe than the reviewer has ever read.

C. F. STRICKLAND

Oxford.

Public Regulation of Milk Marketing in California. By J. M. TINLEY. (University of California Press and Cambridge University Press. 1938. Pp. xi + 213. 7*s*.)

THIS book describes the evolution of one of the most interesting experiments in the public control of milk prices. Too often such control has been introduced merely in order to extricate dairy-farmers from the plight—admittedly severe—into which they were plunged as a result of the catastrophic fall in money incomes, associated with an increase in milk production. Other objectives, such as protecting the interests of consumers, have been lost sight of, although the emergency legislation has outlasted the emergency.

In California this has not been true. Undoubtedly public control of prices was introduced mainly in the interests of producers; the position of consumers, however, received far more attention than is customary in such legislation. After various attempts at control had broken down, for legal and other reasons, two Acts were passed through the California Legislature in 1937, giving the Director of Agriculture the power to fix producer and retail prices. The control of producer prices was not particularly novel, although the Director was instructed to base the price of liquid milk upon that of milk for manufacture, after allowing for extra costs of producing and marketing liquid milk—a relationship which is too often neglected.

The novel feature, and the one to which Dr. Tinley devotes the greater part of his attention, lay in the method of calculating minimum retail margins. Dr. Tinley considers that free competition in distributing milk is not in the interests of consumers,

mainly because the cut-throat competition which it appears to involve endangers the continuity and purity of milk supplies. He doubts the chance of success—in Californian conditions—of distribution by co-operatives or municipalities, and therefore believes some public control of prices to be the only solution.

Under the Californian legislation margins are to be based upon the "necessary" costs, including a reasonable return upon "necessary" investment, of reasonably efficient distributors and retail stores. The chief element of novelty is that, instead of the customary practice of accepting average prevailing costs of distribution as reasonable, an attempt is made to consider only the costs of that number of the most efficient distributors who are required in order to supply the market. The distributors—whose costs are obtained by postal questionnaire, checked to a certain extent by an examination of their books—are ranged in ascending order of costs of distribution per gallon, excluding interest on investment. It is assumed that each could distribute the maximum amount which could be processed with his existing equipment, even though in fact most distributors are working below capacity; the number of distributors necessary to supply the average daily consumption of milk, plus a 20 per cent. emergency reserve, is then calculated. The costs of the distributor with highest costs included in this number are taken as the basis for the necessary margin, and a 6 per cent. rate of interest on the amount invested in the plant is allowed.

Dr. Tinley discusses the assumptions which must necessarily be made in order to arrive at any figure of costs of distribution. He does not consider the problem solved, and recognises the many difficulties of control. His book should be of great value to all interested in the question of public control of prices, not only for its lucid description of one method of control, but also for its general analysis of the underlying principles.

RUTH COHEN

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The Soviet Comes of Age. By TWENTY-EIGHT OF THE FOREMOST CITIZENS OF THE U.S.S.R. Foreword by Sidney and Beatrice Webb. (London: Hodge, 1938. Pp. 337. 15*s.*)

THIS book is a proud record. It tells, largely in statistical terms, the story of Soviet achievement in fields ranging from heavy industry to music during the past twenty-one years. The authors are people who hold positions of responsibility (*e.g.* the

section on inland transport is written by a member of the U.S.S.R. planning commission), and presumably write of what they know.

The following sentences, chosen at random are typical of every paper in the book : " The mining of coal, as compared with 1913, has increased by 330 per cent., the total quantity mined being 126·4 million tons. The oil production showed an increase of 220 per cent. on that of Tsarist Russia. . . . The generation of electric power is now more than seventeen times as great as in pre-War Russia, being equivalent to 32,800 million kw.-hours in 1936 " (p. 49). This kind of thing is useful for reference, but it is difficult to read as consecutive prose. The adjectives "immense," " incredible," " vast," and " perfect " (*e.g.* "the postal employees . . . are now *perfectly* [1] cultured people." " Soviet battleships, though they are of 1914–15 construction, have been thoroughly modernised and are *perfectly* [1] up-to-date warships." " Infantry equipment is now *perfectly* [1] up to date ")—these and similar epithets are very hard-worked throughout the book. Due credit is, of course, given to the Stakhanovite speed-up movement, and we are informed, in all solemnity, that there are now even Stakhanovite pig-breeders.

The result is that a great opportunity has been missed, and that this book contains nothing but disappointment for any serious student of Soviet affairs, and particularly of Soviet economics. To say this is not in any way to belittle what the Soviet authorities have accomplished. Theirs is, indeed, an astonishing, a breath-taking record. But just for this reason, and because this record can be left to speak for itself, the time has surely come when the outsider might be given a little insight into the how and the why. The Soviets have created a form of economic organisation which is indisputably different in important respects from anything that has yet been tried elsewhere. A peep into its works could not fail to throw a flood of light on a host of vital economic problems, concerned with employment, price structure, investment, monetary policy, and the possibilities and limitations of planning.

But no ! we are not to peep. This book does not answer the simplest questions about the working of the extraordinary machine that the Bolsheviks have created. When you have read the section on finance, you do not even know for what loans interest is or is not charged, or what rates prevail and how they are arrived at. You learn that " the government " fix all prices, but who, for this purpose, the government are, and how many

[1] Reviewer's italics.

thousand prices they fix, and on what principles they fix them—to such questions as these you must expect no answer. Yet these are matters with which only responsible Soviet officials and workers, like the authors of this book, can adequately deal. Penetrating outsiders, like Mr. Hubbard or Mr. Reddaway, can go some distance; but sooner or later they are held up because only the people who actually work this system are in a position to give a living picture of it. Several times, now, we have been promised a real inside view of Soviet planning by Soviet planners, and on every occasion we are put off with yet one more of the highly-coloured exterior sketches that we know so painfully well. Perhaps during the second twenty-one years. . . ?

It must be added that the illustrations are a credit to Soviet photography.

BARBARA WOOTTON

London.

The Industrial Worker in India. By B. SHIVA RAO. (Allen and Unwin. 1939. Pp. 257. 10*s.* 6*d.*)

I.L.O. Studies and Reports, Series A, No. 41 : Industrial Labour in India. (1938. Pp. 324. 7*s.* 6*d.*)

Ditto. Series B, No. 26 : Labour Conditions in Indo-China. (1938. Pp. 286 + 37. 7*s.* 6*d.*)

MR. SHIVA RAO'S book and the I.L.O. Report on " Industrial Labour in India " provide excellent complementary analyses of the problems of industrial labour in India and of recent industrial legislation. Mr. Rao's twenty years' experience of Indian labour problems and trade-union activities enables him to give a vivid account of the social background and of labour leadership and organisation. After sketching the origin and development of the labour movement, and explaining the attitude of the Government and of the capitalists—as well as of the labourers themselves—he summarises the main factors affecting the industrial situation as a whole, and then proceeds to analyse the main problems directly concerned. Next he outlines the broad features of industrial legislation in India, and describes the conditions of life and work of the industrial labourer, concluding with a brief summary of present-day trends and the future outlook. The picture drawn reveals all too clearly the miserable conditions and low standard of life that still prevail, but does not give an impression of unrelieved gloom. On the contrary, the author shows that substantial progress has been achieved in the short period that has elapsed since the inauguration of Provincial Autonomy, and the reader is

left with the hope that at last it may prove possible to break the vicious circle of low earnings and efficiency which has hitherto circumscribed the unfortunate industrial wage-earner. The views expressed are notably moderate and well balanced, despite the author's obvious sympathy for the underdog.

The I.L.O. Study is an able compilation, based largely on official sources—particularly the Whitley Report of 1931, which it brings up to date. Its detailed and comprehensive analysis of recent industrial legislation, and the summary (in Chapter II) of much hitherto scattered information with regard to the number and occupational distribution of the proletariat and of workers in large and small-scale industrial concerns, are particularly valuable. On the other hand, it reveals a less intimate understanding than Mr. Rao's book of the fundamental problems involved, of the actual working of the industrial labour system, and of the defects of the existing legislation and administration.

A warm welcome should be given to the I.L.O Study of Labour Conditions in Indo-China, not only because it provides a fascinating introduction to a subject about which little has hitherto been written or known in this country, but also because of the light it throws on the nature of the problems which invariably arise when an Eastern country is suddenly brought into direct contact with modern technique and capitalistic enterprise. The " opening-up " of Indo-China is so recent, and is occurring so rapidly, that here we seem to find almost an ideal example of an economic experiment, which can be watched and studied with great profit, except to the unfortunate victims of the experiment. Recruitment under contract for European plantations began in a small way in the pre-war period, but became " serious " only after 1919. Three " Orders " issued in 1927 are said to have been the real beginning of modern labour legislation. Here, in the space of a few short years, can be seen the disruption of family life and of the village; the development of recruitment; the abuses connected with the " caïs " (the name given in Indo-China to the indigenous middleman who recruits, supervises, and generally oppresses the growing proletariat); the harsh enforcement of the " penal sanction " of contracts; the reactions of these changes on the peasantry and on forms of land tenure; the increase of indebtedness and the consequential loss of land and subdivision of holdings; and the rise of the spirit of revolt amongst the peasantry. " It must be admitted," says the Report, " that there is something radically wrong with a system which to an ever greater extent imposes Western economic methods and increased requirements on

the Indo-China worker, but which at the same time tends to result in a constant reduction of his purchasing power." Three-quarters of the Annamite's expenditure is upon food. Penal sanctions are still enforced. It has been found necessary to impose severe penalties on desertion and on voluntary self-injury and mutilation rendering the worker unfit for employment. Malaria and other diseases are rife. The account given—based largely on personal investigations—forms, indeed, a terrible indictment of the social disruption and economic hardships resulting from capitalist exploitation of a backward area, although full recognition is also given to the varied, and in some cases successful efforts of the Administration at amelioration of the evils involved. The chief hope of the author seems to lie in the co-operative movement, attention being called to the " success " of that movement in other Eastern countries, including British India. One can but hope that this faith may be justified, even if one cannot agree that the movement has been outstandingly successful, at least in British India, where (incidentally) the number of members of primary societies is some 4 millions and not (as is here said) 30 millions.

In conclusion it can be said that all three volumes can be confidently recommended to all who are interested in the economic and social effects of the introduction of modern technique and economic organisation into the East.

VERA ANSTEY

London School of Economics.

An African Survey. A Study of Problems Arising in Africa South of the Sahara. By LORD HAILEY. (London : Oxford University Press. 1938. Pp. xxviii + 1837. 21*s.*)

Capital Investment in Africa. Its Course and Effects. By S. H. FRANKEL. (London : Oxford University Press. 1938. Pp. xvi + 487. 10*s.* 6*d.*)

Science in Africa. By E. B. WORTHINGTON. (London : Oxford University Press. 1938. Pp. xiii + 746. 10*s.* 6*d.*)

THERE has been nothing in recorded history so swift and far-reaching in its results as the overrunning of the outer world by Western Europe during the last four hundred years or so. Africa south of the Sahara, long isolated and within living memory regarded by Europeans simply as something to be circumnavigated on the way to Asia, or as a hunting-ground for slavers, has been the last of the continents to be brought fully under European control, and that suddenly. This isolated land mass, with its

unbroken coast and widely separated harbours, its disappointing rivers, disease-ridden soil, chancy rainfall, vast distances, scanty population and weak social and political institutions, has had to stand up as best it could to the onslaught of the West in its most vigorous and fully developed form. Sixty years ago the overwhelming mass of Africans did not know that there was such a being as a white man. To-day, comparatively few are in that state of innocence, and all Africa south of the Sahara, with the depressing exception of Liberia, is under the rule of some European Power or the rising transplanted European Power of the Union of South Africa. Necessarily, the effects of this impact upon the peoples of Africa have been profound. Nor have the effects upon the incoming Europeans been negligible.

As far back as 1929, General Smuts, speaking as a man rooted in Africa, called for a comprehensive survey, to tell us what was happening in the African continent as a whole. A strong committee, formed in 1933 under the chairmanship of Lord Lothian, invited Lord Hailey to direct such a survey; funds were generously provided by the Carnegie and Rhodes Trustees, and the Royal Institute of International Affairs put its headquarters and research facilities at the disposal of the committee. The monumental *Survey*, which justly bears Lord Hailey's name, since he travelled 22,000 miles in Africa and strained his health in the making of it, and the two supplementary studies by Professor Frankel and Dr. Worthington, now give us, within the geographical and other limits set for the undertaking, a clear, objective and full statement of the present situation, the Here and Now, with suggestions implicit or explicit as to what the next steps should be.

Not all of Africa south of the Sahara is covered by the *Survey*. There is very little about the Portuguese administration, and hardly a reference to German rule, a thing of the past admittedly, but none the less a factor to be taken into account in judging present and perhaps in foreshadowing future developments in Africa. On the other hand, the British, French and Belgian systems are most adequately covered, and one very valuable feature of the *Survey* is the way in which it sets these systems side by side with that which is being developed in the Union of South Africa. Lord Hailey and Professor Frankel note truly the growing importance of the Union in the African scheme of things, and lament the seeming ignorance of the Union of what is being done elsewhere in Africa, and the ignorance elsewhere of what is being done in the Union. But then, nearly all African

administrations, whether under the same flag or not, tend to work in blinkers in a continent in which economic forces and disease make light of political frontiers. The very existence of the *Survey*, quite apart from its concrete suggestions, should do much to eradicate that failing. It may be noted in particular that Lord Hailey, perhaps with the Indian princely states in mind, warns us against elevating the expedients of Indirect Rule to the level of religious dogma, and, certainly with British India in mind, insists that educated Africans, whose number is growing fast, must be brought in alongside Europeans betimes to the work of administration at the centre as well as in local government.

Dr. Worthington, whose earlier first-hand knowledge of East Africa was supplemented by his visit with Lord Hailey to much of British and French West Africa and the Sudan, has written an admirable account of scientific knowledge of and progress in Africa up to the end of the year 1934 and, along certain lines, to the end of 1936. A most welcome feature of his book are the illustrations. Professor Frankel, whose book is accompanied by many tables and graphs and, like Dr. Worthington's, is furnished with a very comprehensive bibliography, takes as his base his earlier work on the goldmines along the Witwatersrand, a veritable social and economic maelstrom for all southern Africa, and besides discussing past capital investment in Africa, essays to interpret the effect of the economic forces which that has set in motion upon the structure of African society. If in places his book makes somewhat heavy going, it gives the reader a vast deal that he will not find elsewhere and is full of wisdom. After noting the great influence of mining on the African economy, and the predominance of British capital thanks to " the highly developed and specialised character of British financial institutions," he reminds us that there is constant need for overseas capital investment if colonial development is to continue, and concludes that " the pace of African economic development cannot be forced by artificial expedients," but that capital investment and economic progress generally will depend on how far the African peoples can be freed from " the factors which have checked their progress in the past," and (it is a South African Professor writing) " the artificial restrictions which in some territories still prevents the unfolding of their abilities."

The original conception of the *Survey* was a general and comparatively short preliminary report; but as the material poured in, official and private, European, American and African, this simple scheme was abandoned, and the *Survey*, like Topsy,

"growed" to its present dimensions of over 2,700 pages of text in the three volumes beside the very properly elaborate indices. A mere reviewer may be permitted to express regret that, even at the risk of adding to the total length, a general survey written by Lord Hailey, with his long Indian experience of writing reports and his keen sense of humour, was not published as an introduction. But where so much has been given, it is perhaps ungracious to ask for more; for here at last is an authoritative account of things as they are in most of Africa south of the Sahara.

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NOTES AND MEMORANDA

Mr. Clark and the Foreign Trade Multiplier

§ 1. Let us write :—

V = increment of expenditure on investment goods.

X = increment of value of exports.

C = increment of expenditure on consumption goods.

M_v = increment of value of imports of investment goods.

M_x = increment of value of imports of materials to be embodied in exports.

M_c = increment of value of imports of consumption goods.

M = increment of value of total imports $= M_v + M_x + M_c$.

p = proportion of increment of total income spent on consumption goods (" marginal propensity to consume ").

q = proportion of increment of expenditure on consumption goods spent on imported consumption goods.

Y = increment of total income earned $= (V - M_v) + (X - M_x) + (C - M_c) = V + (X - M) + C$.

q' = proportion of increment of total imports to increment of total income $= \frac{M}{Y}$ (" marginal propensity to import ").

§ 2. Mr. Keynes' verbal exposition of the doctrine of the multiplier [1] becomes, in the above notation,

$$Y = (V + X - M)\frac{1}{1 - p} \quad . \quad . \quad . \quad . \quad \text{(i)}$$

while Mr. Harrod's [2] becomes

$$Y = (V - M_v + X - M_x)\frac{1}{1 - p(1 - q)} \quad . \quad \text{(ii)}$$

Since $M_c = pqY$, these equations are algebraically identical; but whereas in (i) the q factor is implicit in the multiplicand, in (ii) it is explicit in the multiplier.

§ 3. Mr. Clark, in his book on *The National Income of Australia*, pp. 100–102, uses [3] for the years 1930–31 onwards, the equation

$$Y = (V + X)\frac{1}{1 - p + q'} \quad . \quad . \quad . \quad . \quad \text{(iii)}$$

[1] *The Means to Prosperity*, p. 36.

[2] *The Trade Cycle*, pp. 149, 153–4.

[3] I ignore throughout the complications due to the treatment of Government deficits as honorary investment.

Since $q' = \frac{M}{Y}$, this equation also turns out to be identical with (i), and therefore with (ii).

In his article on "The Determination of the Multiplier" in the ECONOMIC JOURNAL, June 1938, however, Mr. Clark uses a different formula, which resembles (i) in bringing the net balance of payments on current account into the multiplicand. This formula may be written

$$Y = (V + X - M)\frac{1}{1-k} \quad . \quad . \quad . \quad \text{(iv)}$$

where $\frac{1}{1-k}$ stands for the "multiplier applicable to this definition of determinants" in the last line of the table on p. 442.

What is k? Evidently to square with (i), and therefore with Mr. Clark's own (iii), it should be p. But inspection shows that it is not p, but an expression $p(1-q'') + q''$, where q'' is the weighted average of $\frac{M_v}{V}$, $\frac{M_x}{X}$ and $\frac{M_c}{C}$, *i.e.* is $\frac{M}{Y+M}$. (It should be noted that q'' is not the same as the q' of Mr. Clark's book, which is $\frac{M}{Y}$, not $\frac{M}{Y+M}$; *i.e.*, $q'' = \frac{q'}{1+q'}$.)

Thus (iv) may be written

$$Y = (V + X - M)\frac{1}{1-[p(1-q'')+q'']}$$

or

$$Y = (V + X - M)\frac{1}{(1-p)(1-q'')} \quad . \quad . \quad \text{(v)}$$

In other words, Mr. Clark's multiplier is prima facie too large in the proportion $\frac{1}{1-q''}$.

§ 4. I am unable to discern Mr. Clark's reasons for making this change. I do not know whether or not they are connected with his belief (p. 439) that, by "readjusting the multiplier formula," he has "solved the problem" of distinguishing between "autonomous" and "consequential" changes in imports, and avoided attributing a causal effect to the latter. But in any case this belief seems to me baseless. Mr. Clark has become uneasy, as well he may be, about the danger of mixing up cause and effect when dealing with the multiplier. But if he is determined to treat p and some variant of q (as well as X and V) as among the knowns in his problem, he must surely take the consequences. It makes no difference whether the q factor appears explicitly in the multi-

plier or implicitly in the multiplicand; and it does not improve matters to introduce it, as Mr. Clark has done in (v), in both guises.

Moreover an " autonomous " change in imports, due *e.g.* to an alteration of tariff levels, is simply a manifestation of a change in the q factor. Mr. Clark seems to want *both* to keep his q factor invariable *and* to take account of its propensity to change.

§ 5. I should perhaps add that this incursion by an agnostic into the realms of theology must not be taken to imply whole-hearted conversion to the doctrine of the multiplier as an instrument for the analysis of cyclical fluctuations.

D. H. ROBERTSON

COMMENT

I think much gratitude should be due to Prof. Robertson for clearing up a very obscure situation.

It is satisfactory to have equations (i) and (ii) formally stated and their identity proved. Prof. Robertson shows that my equation (iii) is also identical with (i) and (ii). This does not mean that I have accepted equations (i) and (ii) without amendment. Equation (iii) is only applied by me to Australian national income for the period from 1930–31 onwards, since which date there are deemed to have been no autonomous changes in imports. My equation differs from (i) and (ii) in trying to make provision for such autonomous changes. (The adjective " autonomous " in this connection was suggested to me by Mr. Kahn in a discussion which he has now probably forgotten.)

It was very fortunate that the situation in Australia over the last ten years has been simple enough to make possible an application of equation (iii) with a moderate measure of success, independent information being available for the tricky task of estimating the extent of the " autonomous " movements of imports. In the U.S.A., where imports are small in any case, and no autonomous changes in the level of imports can be of much importance, the multiplier of rather over 3 is also found to be closely observed. (R. and W. M. Stone, *Review of Economic Studies*, October 1938.) But in attempting to analyse the far more complex movements in Great Britain 1929 to 1938, a more complex type of formula has to be suggested.

I am grateful for Prof. Robertson's criticism of my formula

(iv) or (v), though I do not think that he has disproved its validity merely by showing its non-identity with (i) and (ii). As I have shown, (i) and (ii) make no provision for autonomous changes in imports as a factor affecting national income, which (v) attempts to do. There is a further important point of difference between (iii) and (v). In (iii), q' is obtained from comparing the movements of Y and M. In (v), k is obtained from independent sources.

I still maintain that it is at any rate worth while attempting to separate out the effects of autonomous changes in imports; and indeed it may be the case that Great Britain is the only country in the world for which it is *not* possible to work out a comparatively simple formula on the lines which I have suggested for Australia.

Prof. Robertson remains unconvinced, though he has no alternative technique to suggest. He points out that changes in imports, due for example to a tariff or de-valuation, may affect not only the absolute volume, but also the marginal propensity to import—that is to say, may affect q' as well as M. If so, the situation becomes more complex again. But there is no need to despair. In Australia q', or the slope of the line connecting M and Y, remained unchanged through most violent movements of both variables. In any case, it is our duty to try to analyse the effects of tariff changes and the like upon both the average and the marginal propensity to import (as we must in every other economic problem). And I still maintain that the most useful approach is that which treats investment, exports, autonomous imports and "excessive spending" as determinants, p and q' (allowing that they may vary sometimes) as forming a multiplier.

Prof. Robertson is willing to discuss these issues while pointing out that he is not wholeheartedly converted to the underlying doctrine. Perhaps I can retaliate by quoting [1] without fully endorsing :—

> "It is some time since the gold standard was regarded by economists as the means of avoiding economic ills. But more recent panaceas such as stable price levels, managed currencies, compensated dollars and flexible exchange rates are also in the discard. It will not be long, I believe, before the present fashion for multipliers, relations and independent variables passes."

[1] From the Presidential address by Professor Melville to the Economic Section of the Australian Association for the Advancement of Science, January 1939.

Professor Melville's theme was that all these considerations were of less importance than the study of dynamic concepts such as " incentive to invest."

At this stage I think the ball passes to Professor Tinbergen. His methods of applying partial correlation to the analysis of a complex situation, allowing several dozen variables altogether and up to four or five in one equation, unlocks a completely new territory. Particularly in the matter of analysis of the factors determining the level of different types of investment, he has already left " the relation " far behind, and has shown the comparative unimportance of interest rates except for long-lived types of investment. So far, Professor Tinbergen has made little use of even the simplest *a priori* concepts, thereby, I think, rendering his task much harder. The multiplier in its original form will soon have done its work. But I am looking forward to its basic ideas becoming absorbed into Professor Tinbergen's system of analysis by partial correlation, to make possible the analysis of the infinitely complex situation of the actual world.

COLIN CLARK

Bureau of Industry, Brisbane.

MR. CLARK'S STATISTICAL DETERMINATION OF THE MULTIPLIER

MR. KEYNES's doctrines have apparently drawn their quota of deductive condemnation and defence. The crossfire of debate over hypothesis, definition, and terminology has dwindled to a mild sniping. In its place there is developing an intensive dispute on the inductive plane. A succession of statistical inquiries has appeared, each purporting to test the *General Theory* by resort to fact. The new line of debate should, of course, enrich our understanding of the issues raised by Mr. Keynes—on one condition. In so far as its motif is the *General Theory*, the disputants should take care that their demonstrations are firmly anchored on a sound understanding of the Keynesian principle that is involved. In a recent article Mr. Colin Clark violated this condition.[1] Our purpose in this note is to criticise Mr. Clark's statistical procedures.

In the article referred to, Mr. Clark has published his measurement of the money-income multiplier for Great Britain in the

[1] Colin Clark, " Determination of the Multiplier from National Income Statistics," ECONOMIC JOURNAL, September 1938, pp. 435–48.

period 1929–37. He obtained his results [1] according to the formula $k = \frac{1}{1-c}$ and, in effect, tested them against direct estimates of the ratio $\frac{Y_i}{I_i}$. We are interested principally in showing that the test is invalid: k is not determinable from income and investment aggregates, or, for that matter, from any dynamic derivative of $\frac{Y_i}{I_i}$, except on the drastic assumption that the average propensity to consume does not vary with the level of income.[2] Apart from this, some attention is due to objectionable features in Mr. Clark's solution for c, the marginal propensity to consume, and $(1-c)$, the marginal propensity to save.

To obtain the maximum of stability in his estimates of the marginal propensity to consume and the multiplier,[3] Mr. Clark resorted to such extreme measures that his final products are a very rough-and-ready variety of weighted average. The first deduction he made from the income increment was an allowance for expenditure upon imports. The propriety of the deduction is obvious: income so spent cannot directly generate additional domestic income. But one may question the propriety of assuming, as Mr. Clark did, both a constant marginal propensity to import over the period 1929–37 and a uniform volume of imports per pound sterling of income derived from the investment and consumption goods industries.[4] A moderate degree of precision is particularly essential in view of Mr. Clark's insistence upon the

[1] "In the formulations above c is the "normal" marginal propensity to consume (*General Theory*, p. 124), as determined exclusively by choices of income recipients. k, calculated from $1 + c + c^2 + \ldots = \frac{1}{1-c}$, is the "normal" multiplier, indicating the "total benefit" (*loc. cit.*, pp. 124–25) to income from an increment of investment. The "short-period" value of the marginal propensity to consume, upon which Mr. Keynes puts primary emphasis (*loc. cit.*, p. 115), we designate by $\frac{\Delta C_i}{\Delta Y_i}$, where ΔC_i and ΔY_i are increments in consumption and income respectively in any given period. I_i is the periodic aggregate of money investment."

[2] For a deductive verification of this point, see E. S. Shaw, "A Note on the Multiplier," *Review of Economic Studies*, October 1938, pp. 60–4.

[3] Colin Clark, *loc. cit.*, p. 439.

[4] *Loc. cit.*, p. 440. Mr. Clark's own data (p. 444) reveal the erratic relationship between increments in income and increments in the value of imports which one would expect to find. The choice of a figure for the marginal propensity to import is very significant for apparent accuracy in estimate of the multiplier. If Mr. Clark had used 0·10 or 0·25 rather than 0·17, as reasonably he might have done, for his measure of the marginal propensity to import, the final figure for the marginal propensity to consume would have been 0·374 or 0·312 instead of 0·346.

To turn to a less important issue, Mr. Clark used an unnecessarily complicated

validity of his multiplier reckonings for each *quarter* of the period surveyed.

The subsequent steps in Mr. Clark's calculation of the multiplier are equally arbitrary. By assumption, and upon the basis of incomplete evidence to the effect that the aggregate of savings from low incomes remained "fairly constant," Mr. Clark placed at zero the marginal propensity to save among people whose incomes fell below the level of £250 per annum.[1] Other investigations indicate that the aggregate of savings from lower incomes varies appreciably, and that, consequently, the marginal propensity to save from those incomes is not zero.[2]

Mr. Clark obtained his entire allowance for saving from the portion of the income increment which flows to the well-to-do—*i.e.* from "gross profits," in his terminology. His procedure is eminently simple. An inspection of the expenditure habits among recipients of higher incomes revealed a central tendency towards stability in their saving propensity. Mr. Clark adopted the mean figure for his multiplier calculation and corrected for variations about the mean in adjustments to his investment data.[3]

Having deduced constant marginal propensities to save for poor and well-to-do alike, over the extraordinary years 1929–37, Mr. Clark had merely to ascertain the marginal apportionment of income between the two classes to secure the community-wide propensity. From a scatter diagram of quarterly aggregates of total income and "gross profits" he obtained two figures for the distribution of the income increment. In the years of recession, depression, and early recovery, 1929–33, he found that "gross

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method for introducing the marginal propensity to import into his calculations of the multiplier (see p. 442. On this page, too, the reader will have noticed the misprint of 0·885 for 0·855, the correct figure for the marginal distribution of income to "gross profits."). His distinction between autonomous, and consequential imports can be disregarded, in so far as the table is concerned, and the multipliers of 2·07 and 3·22 derived directly from $\frac{1}{1-(0\cdot17+0\cdot346)}$ and $\frac{1}{1-(0\cdot17+0\cdot519)}$, respectively. That is to say, the Clarkian multiplier is the reciprocal of the quantity, unity *minus* the marginal propensities to import and to consume (domestic goods).

[1] *Loc. cit.*, p. 436, 447.

[2] Elizabeth W. Gilboy, "The Propensity to Consume," *Quarterly Journal of Economics*, November 1938, pp. 120–40; H. Staehle, "Short-Period Variations in the Distribution of Incomes," *Review of Economic Statistics*, August 1937, p. 139; R. and W. M. Stone, "The Marginal Propensity to Consume and the Multiplier, a Statistical Investigation," *Review of Economic Studies*, October 1938, p. 9.

[3] Colin Clark, *loc. cit.*, pp. 437, 440, 442.

profits " absorbed a greater proportion of changes in total income than they did in the years of recovery, 1934–37. The outcome of it all, of course, was two marginal propensities to save for the entire population, and two multipliers, 2·07 for the earlier period and 3·22 for the later, indicating the total potential impact upon money income per unit increment in the investment aggregate.

Clearly there is a strong tincture of the arbitrary in Mr. Clark's procedure. Each step produces its statistical fiction. The author's excuse is that a stable multiplier is indispensable to tracing the repercussions of investment upon income.[1] It may be legitimate to wonder whether the end justifies the means. If, in fact, the multiplier is not typically stable, an arbitrary figure has at best a pedagogic value.

Mr. Clark's insistence upon extracting a stable multiplier from a strongly cyclical economic sequence impresses us as a step backward in business-cycle theory. It implies a dangerous neglect of the bearing which consumer-taking may have upon the investment process, and exaggerates the rôle of irrationality in business expectations. Before we take the step with Mr. Clark, we are entitled to careful scrutiny of the data that contributed to his final result.

Mr. Clark offered a confirmation of his results which he appears to have regarded as complete vindication for his method of analysis. Multiplying his own quarterly estimates of investment volume in England for the years 1929–37 by the multipliers obtained as described above, he secured a series of quarterly estimates of gross national income. He then compared these synthetic income data with income data computed for the same period from amended figures for national output.[2] The two series coincide very well indeed.

The confirmation is not valid. Algebraically it amounts to testing $I_t \cdot \frac{1}{1-c}$ by Y_t, which implies the view that if Y_t, I_t, and c are accurately measured, $\frac{1}{1-c} = \frac{Y_t}{I_t}$, $\frac{1}{1-c} = \frac{Y_t}{Y_t - C_t}$ and $c = \frac{C_t}{Y_t}$. Mr. Clark has tried, that is to say, to verify his estimates of the public's choice in the disposition of its income (c) by the average propensity to consume as measured from quarterly statistical aggregates for income and consumption. The test is

[1] Colin Clark, *loc. cit.*, p. 439.
[2] *Loc. cit.*, p. 443.

valid only in a special case, in which $\frac{C_i}{Y_i}$ is constant, while income changes. In any other circumstances $\frac{\Delta C_i}{\Delta Y_i}$ must diverge from $\frac{C_i}{Y_i}$, $\frac{\Delta I_i}{\Delta Y_i}$ from $\frac{I_i}{Y_i}$ and $\frac{\Delta Y_i}{\Delta I_i}$ from $\frac{Y_i}{I_i}$. The multiplier is, of course, defined to be a relationship between increments rather than aggregates. $\frac{C_i}{Y_i}$ remains constant only when $\frac{\Delta C_i}{\Delta Y_i}$ and, hence, $\frac{\Delta I_i}{\Delta Y_i}$ do not change. The fact that $\frac{\Delta I_i}{\Delta Y_i}$ was highly unstable during the period of Mr. Clark's investigation is evident in the table below. The ΔY_i's and the ΔI_i's are his direct estimates of increments or decrements in income and investment in successive quarterly periods.

A more logical test for Mr. Clark's estimates of $\frac{1}{1-c}$ and c would have been $\frac{\Delta Y_i}{\Delta I_i}$ and $\frac{\Delta C_i}{\Delta Y_i}$. The table and chart below show the results of applying this test in the modified form suggested by Mr. Clark's own formulation. It is clear that the actual changes in income and the changes estimated by application of the multiplier to the successive ΔI_i's do not correspond at all satisfactorily. Evidently Mr. Clark's insistence upon disregarding irregularities in the data for the sake of a stable multiplier is not entirely justified.

Still the discrepancies between the ΔY_i's and the $\Delta I_i \cdot \frac{1}{1-c}$'s do not necessarily condemn Mr. Clark's cavalier estimates of $1-c$. His data for the direct measurement of income and investment may have been at fault. Or the discrepancies may be particularly dramatic proof of the hazards involved in measurement of the multiplier: the one conceivable check upon $\frac{1}{1-c}$, that is $\frac{\Delta Y_i}{\Delta I_i}$, or the identification of c with $\frac{\Delta C_i}{\Delta Y_i}$ may be invalid.

The check is valid only when the series of multiplier repercussions of investment upon income, $1 + c + c^2 + \ldots$, cumulates with sufficient rapidity to reach approximate equality with $\frac{1}{1-c}$ within the period chosen, here three months; that is to say, when the ΔY's are not directly attributable to the ΔI's of earlier periods in any considerable degree and when the ΔI's have no appreciable stimulative effects upon the ΔY's of subsequent periods. On the other hand if $\Delta Y_i = f(\Delta I_i, \Delta I_{i\,1}, \ldots)$ and

TABLE I.

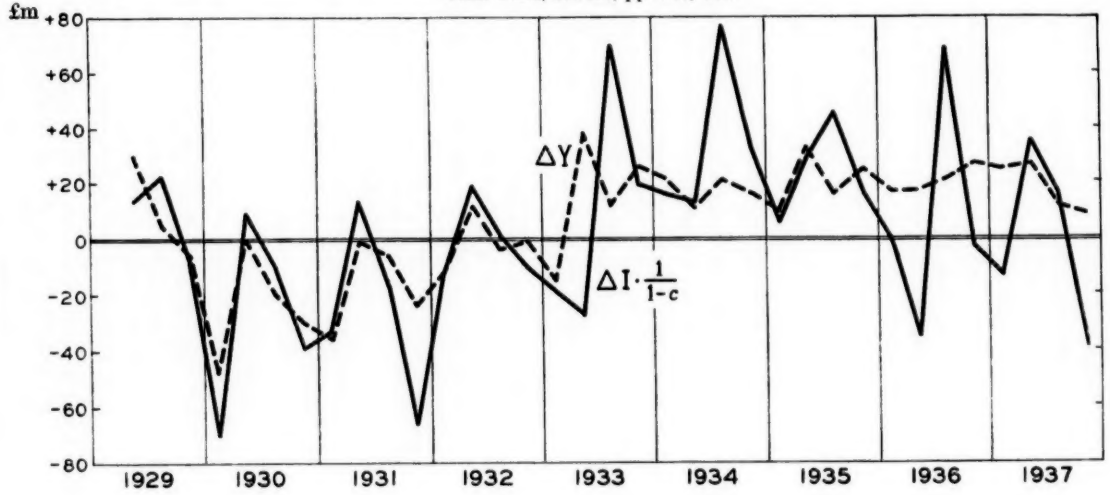
Changes in the National

TABLE I.

Changes in the National Income of Great Britain, 1929–37.[1]

Year.	Quarter.	$\Delta I \cdot \frac{1}{1-c}$.	ΔY.	$\frac{\Delta I_t}{\Delta Y_t}$.	Year.	Quarter.	$\Delta I \cdot \frac{1}{1-c}$.	ΔY.	$\frac{\Delta I}{\Delta Y_t}$.	Year.	Quarter.	$\Delta I \cdot \frac{1}{1-c}$.	ΔY.	$\frac{\Delta I_t}{\Delta Y_t}$.
1929	1	—	—	—	1932	1	− 12	− 12	0·50	1935	1	6	10	0·20
	2	14	30	0·23		2	19	12	0·75		2	29	33	0·27
	3	23	5	2·20		3	2	− 4	− 0·25		3	45	16	0·88
	4	− 8	− 6	0·67		4	− 10	− 1	5·00		4	16	25	0·20
1930	1	− 70	− 47	0·71	1933	1	− 19	− 15	0·60	1936	1	0	17	0·00
	2	10	0	—		2	− 27	38	− 0·34		2	− 35	17	− 0·65
	3	− 10	− 20	0·25		3	70	12	2·83		3	68	21	1·00
	4	− 39	− 30	0·63		4	19	26	0·35		4	− 3	27	− 0·04
1931	1	− 33	− 36	0·44	1934	1	16	21	0·24	1937	1	− 13	25	− 0·16
	2	14	− 1	− 7·00		2	13	11	0·36		2	35	27	0·41
	3	− 17	− 6	1·33		3	77	21	1·14		3	16	12	0·42
	4	− 66	− 24	1·33		4	31	16	0·62		4	− 39	9	− 1·33

[1] Colin Clark, *loc. cit.*, pp. 444, 446.



if, correspondingly, $k = \frac{a\Delta Y_i + b\Delta Y_{i+1} + c\Delta Y_{i+2} + \ldots}{\Delta I_i}$ the check is illusory.[1]

Mr. Clark leaves to his readers the choice of alternative explanations for the discrepancies between the ΔY's and the $\Delta I \cdot \frac{1}{1-c}$'s. His own position is that (*a*) his statistics are sound throughout, and (*b*) " . . . the various stages of the readjustment $[1 + c + c^2 + \ldots]$ take place in very quick succession . . . and, thinking in terms of the three-month time unit which we are using, can be regarded as immediate."[2] The position is evidently perilous : both (*a*) and (*b*) cannot be right, in view of the discrepancies. Mr. Clark is in error somewhere, either in (*a*) or in (*b*) or in both. His danger would have been apparent to him, if only he had not contented himself with $\frac{Y_i}{I_i}$ as a check upon $\frac{1}{1-c}$.

Our impression is that Mr. Clark errs on both counts. To our suspicions of his procedure in measuring propensities to consume, we would add doubts of his assertion that $1 + c + c^2 + \ldots$ cumulates fast enough to approximate $\frac{1}{1-c}$ within so short a time as three months. The sole proof he adduces is that " . . . a very large part of the whole national income is always spent within a week of its being earned."[3] Clearly the proof will not do. Each stage of $1 + c + c^2 + \ldots$, after the first, involves a complete income circuit—the expenditure by consumers and a draft upon inventories, a replenishment of inventories and payment of disposable income to consumers. The consumers' income-outlay lag is not identical with the duration of the income circuit. Considerably more time than one week must be allotted to each of the multiplier swings, and Mr. Clark's estimate of the period over which the large share of the accumulation takes place must be raised accordingly.[4]

[1] The coefficients *a*, *b*, and *c* represent a series of fractions of diminishing size. The series is terminated when the fraction indicating the lagged impact of investment upon income becomes negligible.

[2] *Loc. cit.*, p. 439. The material inside brackets is ours. [3] *Loc. cit.*

[4] Mr. Clark's argument that the quarter is adequate to take in the main portion of the multiplier accumulation implies an extraordinary estimate of the rate of turnover for transactions balances. When the multiplier is 2, at least four swings are required to wear out most of the repercussion on income (say, $1 + 0{\cdot}5 + 0{\cdot}25 + 0{\cdot}125 + \ldots$), and the number rises as the multiplier becomes larger. The reader will be interested to check the Clarkian implications regarding velocity against the figures obtained for the same period by Messrs. E. H. P. Brown and G. L. S. Shackle. See their " Statistics of Monetary Circulation in England and Wales, 1919–37," *Royal Economic Society Memorandum No.* 74, esp. pp. 32–5, 41.

The quarterly period becomes progressively more dangerous as k is large, as the flow of investment varies appreciably from one quarter to the next, and as the flow of investment within the period is concentrated toward the close of the period. Mr. Clark's data contain no clue to the third factor, but the effect of the other two may be observable in our chart above. From 1934 to 1937, when the multiplier appeared to be rather high, the deviations of the ΔY_i's from successive $\Delta I_i \cdot \frac{1}{1-c}$'s were very much larger than in the years 1929 to 1933, with their lesser multiplier. And when marked changes in the rate of investment developed from one quarter to the next the discrepancies were especially striking.[1]

Apparently it was fortunate for Great Britain that, over the period 1929–37, the multiplicative effects of investment upon income were not so closely concentrated as Mr. Clark would have us believe. Our chart indicates that on a number of occasions the secondary repercussions of a change in the investment flow probably counteracted to some extent the immediate effects upon income of a subsequent change in the rate of investment.[2] A multiplier comfortably in excess of unity, *plus* a relatively slow movement of funds around the income circuit, took some of the sting from erratic variations in the rate of new investment.

However suggestive Mr. Clark's data may be for cycle theory, his experience in statistical interpretation of the *General Theory* is our main concern. It is well worth careful consideration by other investigators. Mr. Clark tripped over the subtle distinctions between c, $\frac{\Delta C_i}{\Delta Y_i}$ and $\frac{C_i}{Y_i}$. There are other equally delicate snares ready and waiting for the incautious empiricist.

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ZAKAT—THE ECONOMIC BASIS OF ISLAMIC TITHE

THE religion of Islam may for all practical purposes be divided into two parts: Faith and Practice. The articles of religious practice are fourfold: Prayer, including Ablution; Alms; Fasting; and Pilgrimage. We are here concerned with the second article of Practice—viz., the giving of alms. There are in Islam two kinds of alms: (1) those prescribed by the Law,

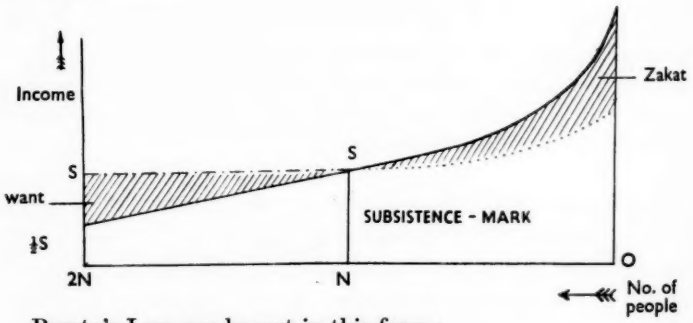
[1] Note particularly the fourth quarter of 1931, the third quarter of 1933, and the third quarter of 1936.

[2] The years 1936 and 1937 were particularly notable on this account.

called *Zakat*, like tithes in the Christian Church, to be made in specified proportions, whether in money, wares, cattle, corn, or fruit; and voluntary gifts, called *Sadakat*, made at the discretion of the giver. Every Muhammadan is enjoined, in one way or another, to dispense a *tenth* of his revenue in relief of the indigent and distressed. It is his religious duty to spend or to give *Zakat*.

The question is whether this almost compulsory charity of one-tenth of the individual income was fixed empirically and arbitrarily; or whether it had some basis of justification in the economic structure (perhaps imperfectly observed) of the early Islamic communities.

In every normal community, which is not in the grip of actual famine, or in the midst of a big war, the number of persons who earn sufficient to make the two ends meet (which we shall call the subsistence-mark) must exceed those who do not so earn. Let us as a first approximation, and as an extreme case, suppose the two numbers to be equal to each other. Among those who earn sufficiently, the Pareto Law of distribution of Incomes will hold good. But the Pareto Law cannot be expected to apply to those whose earning is below the subsistence-mark. Let us suppose that among this class the distribution of incomes is linear, and that it varies from subsistence-mark to half of it; for to suppose that a given large portion of the community is permanently below the semi-starvation limit is to suppose permanent famine conditions. The position is described diagrammatically below:



Pareto's Law can be put in this form:

$$y = N \cdot x^{-a} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (1)$$

y = the number of incomes of Rs. x or over;
x = the income in Rs.;
a = a constant, known as the slope of the curve; its usual value is about 1·5 in modern settled communities.

It can be proved that the average of all incomes above x is

$$\frac{a}{a-1}x \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (2)$$

Putting $a = 1{\cdot}5$, and $x = s =$ subsistence-mark, the average of all incomes above the subsistence-mark can be shown to be equal to $\frac{1{\cdot}5}{1{\cdot}5-1}\,s = 3\,.\,s$; and one-tenth of this is to be spent in *Zakat*; so the total amount of *Zakat* is equal to

$$\tfrac{1}{10} \times 3\,.\,s \times N \quad . \quad . \quad . \quad . \quad . \quad . \quad (3)$$

where $N =$ the number of people above the subsistence-mark.

Total want of the portion of the community, which does not earn sufficiently $= s \times N$; and of this they themselves produce or provide $\frac{\frac{1}{2}s + s}{2} \times N$; so the want to be supplied is

$$\tfrac{1}{4}s\,.\,N \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (4)$$

Equating (3) and (4), we get

$$0{\cdot}30sN = 0{\cdot}25sN \quad . \quad . \quad . \quad . \quad . \quad (5)$$

Or, in other words, the *Zakat* realised is sufficient to meet the wants of the poorer portion of the community.

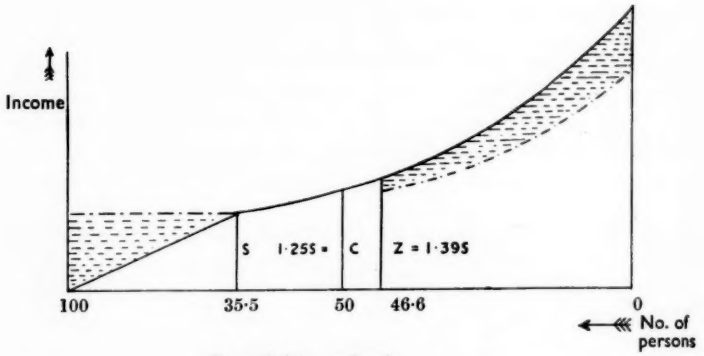
As in primitive communities in the earlier days the distribution of wealth was more equable, if we take $a = 1{\cdot}66$ instead of $1{\cdot}5$; the equation (2) would be $2{\cdot}51s$; and our final equation (5) becomes

$$0{\cdot}251s\,.\,N = 0{\cdot}250s\,.\,N \quad . \quad . \quad . \quad . \quad (5A)$$

Perhaps a much closer approximation to truth can be made, if we take the following into consideration. A person, who is earning just sufficient to make the two ends meet—*i.e.*, a person very near the subsistence-mark—is not likely to pay *Zakat*, or give anything in charity. He must be in *comfort*, before he can be persuaded, even by religious sanctions, to pay *Zakat*. In the East, where asceticism has prevailed for centuries, and in unsophisticated communities, especially those living in a hot climate, the standard of comfort is *low*—very low, according to the modern European standards. Let us, without being dogmatic, take the standard of comfort to be $1\frac{1}{4}$ times the standard of subsistence. For a man to pay one tenth of his income gladly as *Zakat*, and still remain in comfort with the remaining nine tenths, his income must satisfy the condition : nine tenths of income $= 1{\cdot}25 \times$ the standard of subsistence—*i.e.*, his income (I) $= 1{\cdot}39 \times S$.

Let us suppose the number of those who are in comfort to be equal to the number of those who are below comfort. In the

early Islamic communities there were a considerable number of slaves, besides the blind and the maimed and the destitute—the result of frequent wars—who did not earn anything, or at least earn anything for themselves. All the earnings of the slaves went to enrich their masters. There were others, again, whose earnings were not sufficient to maintain them in the proper standard of subsistence. So we assume that the income below the standard of subsistence falls uniformly to zero or nothing. As before, we assume that the Pareto Law applies to all incomes above the standard of subsistence. The position may be described diagrammatically thus :



S = subsistance level.
C = comfort level = 1·25 s.
Z = lower limit of Zakat = 1·39 s.

We have assumed the Pareto Law to apply to all incomes above S, the subsistence-mark; and the ratio of C (standard of comfort) : S (subsistence-mark) = **5 : 4.**

So, $\frac{\text{no. of persons having an income of } C \text{ and over}}{\text{no. of persons having an income of } S \text{ and over}} = \frac{y}{y'}$; and Log $(y/y') = a$ Log $(x/x') = a$ Log $5/4 = 1{\cdot}5$ Log $5/4$; from which we can calculate Log (y/y'); and taking $y' =$ unity, we find $y' = 1{\cdot}29$ times y; and as we have supposed y to represent 50 per cent. of the total population, $y' = 64{\cdot}5$ per cent. Similarly we can calculate the value of y for incomes $= 1{\cdot}39\ S$, which is 46·6 per cent. Total want of that portion of the community which does not earn sufficiently is, therefore $= 35{\cdot}5\ S$; and of this want a portion, viz. $(s - 0)/2 \times 35{\cdot}5\ S = 17{\cdot}75\ S$ is supplied by themselves; so the want to be supplied $= 17{\cdot}75\ S$. The aggregate of *Zakat* received from all persons whose income is above $1{\cdot}39\ S$ is $\frac{1}{10} \times a(a - 1) \times 1{\cdot}39\ S \times 46{\cdot}6$ or $19{\cdot}56\ S$.

There is thus correspondence between the two sides to the extent that 17·75 S equates to 19·56 S. The error, or the difference between the two sides, is some 9 per cent.

Allowing for the cost of collection of *Zakat*, and something for evasion—both wilful and unconscious—there is sufficiently close correspondence between the two sides of the equation to warrant us to think that the amount of *Zakat* was not fixed arbitrarily, but was based on observance of the economic structure of the then Islamic society and its wants.

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OBITUARY

LORD SANDERSON (1868–1939)

BY the death of Lord Sanderson, formerly Henry Sanderson Furniss, whose career was a notable triumph over blindness, the ECONOMIC JOURNAL has lost a long-established reader and a one-time regular contributor to its review columns. He began to write reviews for this JOURNAL as far back as 1904, when Professor Edgeworth was editor, and continued more or less regularly until his elevation to the House of Lords in 1930 tied him to political work.

His intense interest in the subject of Economics was first roused whilst studying at Oxford for the History School in the early 'nineties, and remained with him for the rest of his life. He joined the British Economic Association (later the Royal Economic Society) in 1894, and when the Tariff Reform agitation began in 1903, as an ardent Free Trader he engaged in controversy with W. A. S. Hewins in the columns of *The Times*. In the courses of lectures he subsequently gave in Oxford he always dealt incisively with the subject of foreign trade.

In 1907 he was elected to the University Political Economy Club, of which he was made an honorary member a few years ago. In the same year he succeeded H. B. Lees-Smith as Tutor and Lecturer in Economics at Ruskin College, and two years later was co-opted on the University Committee for Economics, where he served for many years, and was influential in helping to widen the scope and raise the standard of the Diploma in Economics and Political Science. At that day relatively little attention was given in Oxford to the study of Economics, and Sanderson actively contributed to the growth in recognition of its importance. With the purpose in view of giving scope to the younger economists, he

and the late Edwin Cannan founded in 1924 an informal association of Oxford Tutors in Economics by the name of S.O.E. (Some Oxford Economists). In the rooms of the members in rotation, at a meeting held each term, one of the members would introduce discussion on some economic issue, and be subjected to the criticism of the others. Ways and means of promoting better facilities for Economics in the University were frequently considered. The association kept in being until the death of Edwin Cannan in 1935, a lengthy existence for this type of body, and most of the economics tutors resident in Oxford during its life were enrolled in its membership.

In the field of Economics Sanderson's energies were mainly occupied in tutorial work, and his published work was little in amount. In addition to his autobiography, *Memories of Sixty Years*, he was author of a *Life of Charles Sydney Buxton*, who was at one time Vice-Principal at Ruskin College. Reviews for the ECONOMIC JOURNAL and other journals, a number of papers given at conferences arranged under the auspices of Ruskin College and published with other papers in the " Reorganisation of Industry " Series, a few articles on current topics of economic interest published as leaflets or in educational papers, these were the main bulk of his economic writings. In 1917 he edited *The Industrial Outlook*, a symposium on various aspects of the situation at the time. Early in the war years he began work on a book to be entitled *Economic Doubts*, but was drawn into war-time activities and the work was never finished.

Faulty and over-simple as the classical economists are revealed to be in the light of modern knowledge and criticism, their attitude of mind, their attempts to construct a comprehensive " system " for the interpretation of economic circumstances, had a degree of appeal to him. In his view too little attention was paid to the inferential bearing of the mass of economic data accumulated in our own day. He never liked the mathematical treatment of Economics. It was not so much that he was not himself a mathematician as that he realised so well the importance of the subject for the wage-earning classes. As he saw it, study of the subject was difficult enough without the introduction of chunks of higher algebra, and some attempt should be made to lessen its difficulties by the use of a less formidable instrument.

The bulk of his teaching work was amongst working people, in the main at Ruskin College from 1907 to 1925, where he was Principal for the latter ten years. As a tutor he was patient and stimulating. An enormous amount of preparatory work was put into

his teaching. In relation to the scope and variety of the economic subjects he taught the work entailed was considerable for any person of normal sight, but it was doubly so for a blind man to whom everything had to be read. That he managed to undertake so much teaching work in addition to his other activities was a remarkable feat. He acted as a District Secretary for the Workers' Educational Association during the war years, and from then on was a District President almost to the time of his death. As a member of the Oxford Delegacy for Extra-Mural Studies he took a prominent part in the introduction of the scheme for bringing tutorial class students to Oxford to undertake degree courses. Throughout his working lifetime he was greatly concerned to extend facilities for adult wage-earners to gain the benefits of a University education.

Although he stood for Parliament in 1918—he was the first Labour candidate to contest Oxford University—he did not take an active part in politics until after his retirement from Ruskin College. In the House of Lords he was for several years representative of the Labour peers on the Parliamentary Executive of the Labour Party. To his parliamentary, as to his teaching work, he brought a thoroughness of method, and a retentiveness of memory, that were a source of admiration and envy to his colleagues.

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Oxford.
A. BARRATT BROWN

CURRENT TOPICS

THE annual meeting of the Society was held at the London School of Economics on May 18th, 1939, when Professor D. H. Robertson read the Presidential address prepared by Professor A. C. Pigou under the title of "The March of Time," which is printed above. The accounts of the Society showed an excess of expenditure over income for the year amounting to £61 before taking account of life compositions, and a surplus of £359 after allowing for the latter. 538 new fellows and library members were elected during the year, and 489 were lost by death, resignation or default, leaving the number of fellows and library members on December 31, 1938, at 4,578.

The Secretary announced that the complete edition of the Works of Ricardo, which has been long in preparation under the editorship of Mr. Sraffa, is now almost finished with the exception of the last two volumes (publication of which will be postponed), and is in the hands of the printer. A further announcement will be sent to members in the course of the year.

THE following have compounded for life membership of the Royal Economic Society :—

Cummins, Miss F. R. W.
Cummins, W. H.
Dastoor, K. M.
Director, A.
Ghose, B. C.
Hill, Miss M. E.
Humphreys, A. S. B.
Jalea, V.
Jastram, R. W.
Jones, Homer.
Kiernan, Dr. T. J.
Kolisch, P.
Lewis, R. M.
Marks, G. N.
Mateescu, Dr. D. G., O.B.E.
Miller, G. D.
Morthland, R. J.
Mortimer, L.
Morton, R. G.
Rockefeller, D.
Simmons, F. L.
Stigler, G. J.
Timm, O. H.

The following have been admitted to membership of the Society :—

Advani, K. U.
Anderson, R. V.
Arnaud, R.
Arredondo, P.
Atkinson, D. M.
Austin, F. W.
Banerjee, P.
Barr, J. R.
Bartlett, M. S., D.Sc.
Bartrop, W. T. C.
Bennett, C. C.
Bhar, S.
Bhatnagar, Miss S.
Bissell, R. M., Jr.
Bonar, H. V.
Bowen, I. I.
Buckee, W. E.
Bushell, P. H.
Carruthers, G. M.
Carter, V. F.
Causer, J.
Chadwick, A.
Charak, G. S.
Chaudhury, R. K.
Conway, Prof. L. T.
Corbett, D. H. P.
Cotta, Prof. F.
Cotterill, H. S.
Dobson, R. W.
Drury, Rev. W.
Dunbar, F. G. S.
Durrant, A.
Emblem, L. F.
Evans, B.
Fang, S. Kao.
Fawkes, D. K.
Fišter, M.
Flood, M. M.
Flowerdew, L. J.
Forsyth, R. L.
Foster, C.
Franks, H. B. S.
Froehlich, Prof. W. H.
Gabbatiss, J. T.
Garfield, J. S.
Geddes, A. C.
Gibson, R. V.
Giles, A. W. S.
Goldenberg, L.
Goodliffe, A. G.
Gordon, Capt. E. A.
Greenfield, T. H.
Gregory, R.
Griffiths, F.
Gupta, N. C.
Gupta, S. R.
Hanson, W. A.
Hart, A. L.
Haslam, E. P.
Hawkesworth, J. D.
Hibberd, E. B.
Higginbotham, W. H.
Homan, Prof. P. T.
Howells, A. J. D.
Hoyle, C. M.
Humphrey, Dr. D. D.
Hunold, Dr. A.
Hutcheson, Dr. H. H.
Hyamson, P. H. S.
Ibbetson, H.

Irogoyen, M. S.
Jefferies, J. D. B.
Jones, M. M.
Jones, R. E. F.
Jones, T. H.
Judson, C.
Jurjus, B. B.
Kallend, H. G.
Kalyanasundaram, K. V.
Kazim, Mohamed A. H. A.
Kelly, T. D.
Kent, W. J.
Kinsley, W. N.
Knapp, John.
Lang, P. J.
Lawrence, M.
Lee, F. W.
Leech, D. C.
Lewington, H. E.
Lomax, K. S.
Long, W. J. O.
Lowery, J. G.
Lutfalla, G.
McCabe, A. E.
McQueen, R.
Mead, F. C.
Meadows, P. H.
Mills, Vincente.
Mitchell, W. M.
Moore, R. E.
Morland, H.
Moulsdale, T. E.
Mukerjee, H. P.
Neuhaus, K. T. W.
Newman, L. C.
Nield, C.
Nokin, M.
Norris, W. J. C.
Oates, A. L.
Owtram, T. C.
Padley, R., Jr.
Parmar, M. G.
Parmar, P. G.
Patmore, F. W.
Percival, G. R.
Philips, A.
Potts, J. W.
Powell, W. J.
Pursey, G. A.
Pury, Dr. P.
Rabkin, A.
Rahman-Gani, H. H.
Rangadurai, V. C.
Rao, B. A.
Rawlings, R. A.
Rayjada, V. M.
Reed, Prof. H. L.
Reid, H.
Reid, W. J.
Richards, N.
Richardson, G. A.
Robinson, H. W.
Roche, J. J.
Rowe, G. C.
Rowley, C. A.
Salter, G. P. S.
Salusbury-Jones, G. T.
Saroopa, A.
Seward, H. S. W.
Shakespear, C. R.
Siebenberg, P. J.
Simmons, E. C.
Smith, N. H.
Smith, R. H.
Somasegaram, S. U.
Spingarn, E. D. W.
Stein, Miss Rose M.
Stein, Dr. W. J.
Stewart, Rev. D. H.
Stokes, F. M.
Storer, R. H., Jr.
Strange, D. R.
Strange, R. H.
Symeonides, G. C.
Tata, K. A.
Taylor, D. R.
Tennant, E. E.
Thompson, R.
Titmuss, R. M.
Tucker, N. M.
Tyler, W. E.
Venkataraman, Dr. K. S.
Waknis, N. D.
Walker, Q. F.
Walton, E.
Weaver, D. V.
Wexler, P.
Wheeler, E. H.
Wiltshire, H. R.
Wright, Sir C. H.

The following have been admitted to Library membership of the Society :—

Agricultural and Mechanical College of Texas.
Allegheny College Library, Pennsylvania.
Arts Library, Dalhousie University.
Beloit College, Wisconsin.
Central Statistical Board, Washington.

Confederazione Fascista degli Industriali, Rome.
Courtaulds, Ltd.
David Brown & Sons (Huddersfield), Ltd.
Department of Industries & Commerce, Wellington, New Zealand.
De Paul University, Chicago.
Dublin University Economics Society.
Facolta di Scienze Economiche e Commerciali, Florence.
Florida State College for Women.
The Financial Times, London.
Graduate School of Public Administration, Cambridge, Mass.
Institut Supérieur de Commerce de l'État, Anvers.
Minneapolis Public Library.
Northwestern University Library, Evanston.
Royal Philosophical Society of Glasgow.
School of Commerce, University of Alabama.

SOME recent acquisitions of the Seligman Library at Columbia University will be of interest to students of French economic literature.

I. A three-volume collection of MSS. by John Law, from an old French Castle in the South, contains some fifty-odd works by Law. Among these are not only several of the works described by Harsin in his recent *Collected Works of John Law* as existing only in unique copies, but also at least seven items not known to Harsin. Among these hitherto totally unknown works is one which clears up the mystery of Law's whereabouts between 1703 and 1710. He was during these years at the head of the Assiento Company in Buenos Aires. Among the other unique works are several essays on the Jesuit communities in Paraguay, and a long dissertation on the India Company.

II. Dupin, as is well known, issued in 1749 his *Reflections on Montesquieu's Spirit of the Laws.* He printed only eight copies, and tells us that he destroyed all but two. Shortly thereafter he rewrote the work and printed a few copies in three volumes as *Observations on the Spirit of the Laws.* These were destroyed at the instance of Madame de Pompadour, and only three or four copies survived. One of these is now in the Seligman Library.

But what has hitherto not been known is the fact that Dupin rewrote the three volumes and was about to publish the new work when he suddenly died. These three MSS. volumes, of which there is no trace of a copy anywhere, are now in the Seligman Library.

III. When Turgot was intendant at Limosges, he wrote a number of letters and instructions on the reform of the Taille. Dupont in the *Collected Works of Turgot* tells us that many of these, which he at one time owned, were burned or lost during the Revolution. He was consequently able to publish only one circular letter, that of 1762.

The Seligman Library has acquired not only a copy of this rare letter, but also two other letters of the same date hitherto totally unknown. One is a 16-page letter printed at Angoulême, the other a 52-page letter printed at Paris. Both are in 4to, and are of considerable importance.

IV. When the Government was at odds with the Parlements in 1763 it issued the well-known invitation for suggestions of reform. A very few of these have come down to us. What has hitherto not been known is that the Parlement of Provence prepared in fifteen thick folio volumes the so-called *Minutes and Memoires sent to the Controller of Finance in virtue of the King's Declaration of Oct. 29, 1763.* This is by all odds the fullest statement and discussion of the French revenues in existence. The only known copy is now in the Seligman Library.

V. Lomenie de Brienne, at the head of the finances just before the Revolution, collected a splendid library on Public Finance. Among the hitherto unknown items acquired by the Seligman Library from that collection are several pamphlets on the Estates General of 1614 and on the Convention of 1789–1790.

Professor Seligman is utilising the above material in his forthcoming three-volume *History of Fiscal Science.* If the opportunity offers, however, he may prepare a fuller note on these recent acquisitions.

A comprehensive work is in course of being carried out under the general editorship of Sir William Beveridge, with the object of presenting a history of prices and wages in England as part of a co-ordinated scheme of parallel studies in other countries. The effective beginning of the history for England is about 1155 and its ending is about 1830. The work follows the pioneer labours of Thorold Rogers in being based on contemporary documents, but its temporal range is 250 years greater and its material is both more abundant and more select. First place is given to what are called Primary Tables—yearly prices of commodities in terms of contemporary money. The Primary Tables are supplemented by Secondary Tables of various kinds. The work as a whole is entitled " Prices and Wages in England from the

Twelfth to the Nineteenth Century"; Volume I, comprising "Price Tables: Mercantile Era," is now available and covers lx + 756 pages, large 8vo. The prices tabulated in this volume are from the following sources: Winchester College 1393–1817, Eton College 1444–1830, Westminster (School and Abbey) 1574–1830, Charterhouse 1644–1830, Sandwich (St. Bartholomew's Hospital) 1543–1766, Greenwich Hospital 1712–1828, Chelsea Hospital 1702–1810, Lord Steward's Department 1659–1830, Lord Chamberlain's Department 1556–1830, Royal Works 1552–1814, Navy Victualling 1683–1826, Naval Stores 1566–1813.

This volume is offered to the general public at a price of 31*s.* 6*d.* net. It is available, however, to members of the Royal Economic Society at 22*s.* for addresses in this country and 22*s.* 9*d.* for addresses overseas, inclusive of postage and packing. Members who wish to receive this volume should apply immediately to the Assistant Secretary, Mr. S. J. Buttress, 6 Humberstone Road, Cambridge, enclosing the appropriate remittance.

A LIMITED number of copies of the political and economic survey of South-Eastern Europe, jointly prepared by the London and Cambridge Economic Service and the Royal Institute of International Affairs, and published by the latter in cloth at 5*s.*, are available to members of the Royal Economic Society at 4*s.* (post free) in a paper binding, on application to the Secretary of the London and Cambridge Economic Service, The London School of Economics, Houghton Street, Aldwych, London, W.C. 2.

MR. S. R. DENNISON of the University of Manchester has been elected to the Chair of Economics at University College, Swansea, vacant by the appointment of Professor Isles to Adelaide. Mr. Dennison, who graduated originally in Durham University from Armstrong College, Newcastle, proceeded thence to Cambridge, where he was placed in the First Class in Part II of the Economics Tripos of 1935. Since then he has been a member first of the research department and latterly of the teaching staff of Manchester University.

INFORMATION regarding the Barnett Scholarship in the Social Sciences of £150 value, tenable at Wadham College, Oxford, and the Drummond-Fraser Research Fellowship, of £100 value, tenable at the University of Manchester, may be obtained from the Warden of Wadham College, Oxford, and the Dean of the Faculty of Commerce of Manchester University respectively.

The British Association, Section F.—The British Association meets this year at Dundee from August 30th to September 6th. The sessions of Section F will be held in the Dundee School of Economics. The programme this year is a combination of pure theory and of applications of theory of Scottish and other conditions. Professor L. M. Fraser, Professor A. G. B. Fisher, and Mr. R. L. Hall will discuss various aspects of the theory of Socialism, and Mr. E. F. M. Durbin "The Contemporary Position of Trade Cycle Theory." There will be a number of papers on the economic problems of Scotland, including one on Housing by Dr. M. Bowley, on "The Finance of Scottish Government" by Mr. A. D. K. Owen, and on "The Finance of New Enterprise in Scotland" by Mr. A. Cairncross. Mr. Gilbert is reading a paper on Dundee and other investment trusts, Mr. Collier on problems of "The Social Economy of the Crofting Districts," and Dr. Thomas Adams on "Economic Aspects of Urban Centralisation." Localisation of industry and the British coal industry will be discussed by Mr. Wensley and Mr. Beacham. Lord Nigel Douglas-Hamilton will address a special afternoon session on industrial developments, land experiments, and public works schemes of the Special Areas in Scotland. Professor Meredith will give his Presidential Address on Tuesday, September 5th. Inquiries should be addressed to the Recorder of the Section, Professor P. Ford, University College, Southampton.

It is intended to publish shortly a revised list of members of the Royal Economic Society, and of their addresses. The Editors will be grateful if members will inform the Assistant Secretary, Mr. S. J. Buttress, 6 Humberstone Road, Cambridge, as soon as possible of any changes of address or description.

ERRATA

We have to apologise for four misprints in the Economic Journal of March, 1939. In a note under "Current Topics" (page 178) concerned with the varied spellings of "autarky," that word was made to derive from the root *ἀρκεῖν*. We need hardly point out that that should have read *ἀρκεῖν*. In Mr. Harrod's review of *Political Economy* by Nassau Senior, page 148, line 23, "ability" should read "utility." The other two both appear in Mr. Harrod's article, *An Essay in Dynamic Theory*. On page 18, line 3, equation 1(*a*), large S should read small s. On page 27, lines 18 and 19, namely

$$\therefore \frac{s - k - \frac{K}{x_0}}{C_p} = \frac{x_1 - x_0}{x_0} = G$$

$$\therefore G_w = \frac{s - k - \frac{K}{x_0}}{C}$$

belong to the footnote at the bottom of the page and should follow the equation therein set out.

RECENT PERIODICALS AND NEW BOOKS

Journal of the Royal Statistical Society.

PART I, 1939. *Production and Efficiency:* A. L. BOWLEY. *The Geographical Distribution of Crop Productivity in England:* M. G. KENDALL.

Economica.

FEBRUARY, 1939. *Ethics and Economic Reform*, 1; *The Ethics of Liberalism:* F. H. KNIGHT. *International Short-Term Capital Movements:* P. B. WHALE. *Capital Intensity and the Trade Cycle:* N. KALDOR. *The Equation of Exchange:* L. M. FRASER. *A Survey of Milk Distribution:* H. S. BOOKER. *The End of Marginal Utility; A Note on Dr. Bernardelli's Article:* P. A. SAMUELSON. *A Reply to Mr. Samuelson's Note:* H. BERNARDELLI.

Review of Economic Studies.

FEBRUARY, 1939. *The International Propagation of Business Cycles:* J. J. POLAK. *Commodity Stocks and Prices:* J. K. EASTHAM. *The Uneven Distribution of Unemployment in the United Kingdom, 1929–1936, II:* D. G. CHAMPERNOWNE. *The Soviet Concept of Equilibrium:* E. M. CHOSSUDOWSKY. *Public Finance in the National Income:* J. R. and U. K. HICKS. *Investment in the Building Industry, I:* I. BOWEN. *Money Wage Cuts in Relation to Unemployment:* H. M. SOMERS.

Economic History Review.

NOVEMBER, 1938. *Germany's Trade with her Colonies, 1884–1914:* W. O. HENDERSON. *The English Medieval Quarry:* D. KNOOP and G. P. JONES. *The Rotation of Crops at Westerham, 1297–1350:* T. A. M. BISHOP. *Edward Backwell as a Royal Agent:* D. K. CLARK. *The Evolution of the British Building Society:* H. J. G. BAB. *The Origins of Napoleon III's Free Trade:* G. WRIGHT. *Studies in Bibliography; VI. Agriculture from the Restoration to Anne:* G. E. FUSSELL. *List of Books and Articles on the Economic History of Great Britain and Ireland:* J. DE L. MANN. *List of Books and Articles on the Economic History of France:* M. BLOCH and P. LEUILLIOT.

The Eugenics Review.

APRIL 1939. *Positive Eugenic Policy:* C. G. DARWIN. *Eugenic Prognosis:* L. S. PENROSE. *External Migration:* R. S. WALSHAW. *The Work of the Population Policies Committee:* F. LAFITTE.

The Banker.

MARCH, 1939. *Factors Distorting Bank Statistics:* A. V. BARBER. *After the Reichsbank Purge:* P. EINZIG.

APRIL, 1939. *Can We Avoid Inflation?:* R. W. B. CLARKE. *A Critique of the National Accounts:* G. L. SCHWARTZ. *Germany's Recovery:* P. EINZIG. *Building Societies Surveyed:* R. BIRD.

MAY, 1939. *The Gilt-Edged Market. South American Banking. A Scottish Banking Pioneer:* C. J. SHIMMINS.

Lloyds Bank Monthly Review.

FEBRUARY, 1939. *The Future of International Trade:* M. ZVEGINTZOV.

MARCH, 1939. *The Empire and the Anglo-American Trade Agreement:* H. V. HODSON.

APRIL, 1939. *The Northern Countries:* G. SOLOVEYTCHIK.

Midland Bank Monthly Review.

FEBRUARY–MARCH, 1939. *Financial Policy and Business Confidence.*
MARCH–APRIL, 1939. *The New Currency Act.*
APRIL–MAY, 1939. *The Change in Monetary Policy.*

Westminster Bank Review.

MARCH, 1939. *Britain's Export Trade Problems.*
APRIL, 1939. *Luxury Spending.*

Planning.

No. 142. *Industrial Location Proposals.*
No. 143. *The Gas Report Summarised.*
No. 144. *Rival Conceptions of Trade. Economics of Collective Security.*
No. 145. *Instruments of Economic Security.*
No. 146. *The Control of Health Services.*

Fabian Quarterly.

No. 21. *Defence Loans and Interest Rates :* "CITIZEN." *Housing Policy and the Building Societies :* I. BOWEN. *Free Legal Aid :* J. E. ALLEN-JONES.

International Labour Review.

MARCH, 1939. *Population and Social Problems. Wage Theory and Wage Policy :* P. H. DOUGLAS. *Hours of Work in Germany. Wages of Native Miners in Southern Rhodesia.*
APRIL, 1939. *The Diversity of Co-operative Societies and their Classification :* G. FAUQUET. *The Economic and Social Effects of Industrial Development in Hungary :* M. MITNITZKY. *Facilities for Workers' Holidays. Hours of Work in Japan. Conditions in Syria and the Lebanon.*
MAY, 1939. *The Organisation of Social Insurance in Greece :* I. ZARRAS. *Trade Unionism as a Factor in Recent American Wage Movements :* Z. C. DICKINSON. *Regulation of Hours in Swedish Agriculture. Anthrax in Germany. Uganda Labour Enquiry.*

The Canadian Journal of Economics and Political Science.

FEBRUARY, 1939. *Equilibrium and Wealth :* K. E. BOULDING. *The Canadian Manufacturers' Association and the Tariff :* S. D. CLARK. *Competitive Aspects of Road and Rail Freight and Passenger Rates :* J. B. ROLLIT. *Motor Competition and Railway Labour Costs :* J. L. MCDOUGALL. *The Senate Committee on Railways, 1938 :* A. W. CURRIE.

The South African Journal of Economics.

MARCH, 1939. *The Rate of Interest :* G. F. THIRLBY. *Landboukrediet-fasiliteite Voor Unie :* E. H. D. ARNDT. *European Population Movements in the Union of South Africa :* D. V. GLASS. *Witwatersrand Gold Mines Employees Provident Fund :* C. W. KOPS. *Some Notes on Mauritius with Special Reference to the Establishment of the Mauritius Agricultural Bank :* W. R. OWENS. *City Government : The Johannesburg Experiment :* S. H. FRANKEL.

Indian Journal of Economics.

JANUARY, 1939. *Methods of Coal Conservation in India :* B. MUKHERJEE. *Unemployment in India :* M. P. GANDHI. *Agricultural Marketing in India :* S. C. CHAUDHRI. *A Study of Population Movement in India :* B. G. GHATE. *Optimum Production under Imperfect Competition :* P. C. JAIN. *The Theory of Consumer's Surplus, a Defence :* K. J. M. THARAKAN. *Economic Conditions in the Bombay Karnatak and the Place of Co-operation in their Betterment :* M. M. BASRUR. *The Evolution of Decentralisation in Indian Finance (1833–1882) :* A. N. AGARWALA. *The Optimum Population :* G. R. RAO. *What is Economics? :* B. G. BHATNAGAR.

Quarterly Journal of Economics.

FEBRUARY, 1939. *Quantitative Measurement in Economic History:* E. HECKSCHER. *The State and Industrial Order:* E. M. HUGH-JONES. *The Voluntary Exchange Theory of Public Economy:* R. ABEL-MUSGRAVE. *One Hundred and Fifty Years of American Navigation Policy:* J. G. B. HUTCHINS. *Tax Remission as a Means of Influencing Cyclical Fluctuations:* K. E. POOLE. *The Shifting of Sales Taxes:* D. W. GILBERT. *The Rate of Interest Under Ideal Conditions:* P. A. SAMUELSON.

The Journal of Political Economy.

FEBRUARY, 1939. *Thoughts on Perusal of Wesley Mitchell's Collected Essays:* A. B. WOLFE. *The New Collective Bargaining in Mass Production:* EMILY C. BROWN. *A Reconsideration of the Cobweb Theorem:* N. S. BUCHANAN. *Interpreting Unemployment in Terms of Family Units:* D. D. HUMPHREY. *Railroad Fixed Charges in Bankruptcy Proceedings:* W. H. MOORE. *Speculation and the Risk-Preference:* H. S. IRWIN.

APRIL, 1939. *Henry Schultz: His Contributions to Economics and Statistics:* T. O. YNTEMA. *Speculation and Forward Exchange:* C. P. KINDLEBERGER. *Currency Issues to Overcome Depressions in Delaware, New Jersey, New York, and Maryland, 1715–37:* R. A. LESTER. *Wage-Rates, Investment, and Employment:* E. M. BERNSTEIN. *The Union Bank of Louisiana Loan, 1832:* R. W. HIDY. *The Incidence of a General Output or a General Sales Tax:* H. G. BROWN. *Note on the Problem of Bilateral Monopoly:* G. TINTNER.

The Review of Economic Statistics.

FEBRUARY, 1939. *Fluctuations in United States Consumption, 1919–1932:* J. J. POLAK. *Some Aspects of the Concept of Capacity to Produce:* H. H. VILLARD. *Seasonal Variation in Money in Circulation:* B. FOX. *Cyclical Variations in Wage Structure:* J. T. DUNLOP. *Review of the Year 1938:* W. L. CRUM and DOROTHY WESCOTT.

Journal of the American Statistical Association.

MARCH, 1939. *Science and Society:* R. H. COATS. *Postponable Purchasing of Durable Consumers' Goods:* C. S. TIPPETTS. *Producers' Goods Prices in Expansion and Decline:* L. G. REYNOLDS. *Prices of Consumers' Goods in Expansion and Recession:* H. B. ARTHUR. *Concepts Used in Unemployment Surveys:* J. N. WEBB. *An Index of 10 Commodities, Monthly, 1815–60:* W. F. HICKERNELL. *The Effectiveness of Institutional Treatment:* G. B. VOLD. *The Purpose of Parole Statistics:* H. WILLBACH. *Clearing Variates in Confluence Analysis:* H. MENDERSHAUSEN.

American Economic Review.

MARCH, 1939. Part I. *Progress and Declining Population:* A. H. HANSEN. *Double Taxation of Savings:* I. FISHER. *Wage Rates in the General Welfare:* W. I. KING. *Petroleum Regulation in South America:* D. M. PHELPS. *Economics of National Resources Committee:* A. G. GRUCHY. *Blocked Commercial Balances:* H. G. WHITE. *Ability-to-Pay Theory of Taxation:* M. S. KENDRICK.

MARCH, 1939. PART 2, SUPPLEMENT. *Papers and Proceedings of the Fifty-first Annual Meeting of the American Economic Association.*

The Annals of the American Academy of Political and Social Science.

MARCH, 1939. *Appraising the Social Security Program.*

Econometrica.

APRIL, 1939. *The Work of Henry Schultz:* H. HOTELLING. *Henry Schultz as Colleague:* P. H. DOUGLAS. *Annual Survey of Statistical Data: Pareto's Law and the Index of Inequality of Incomes:* C. BRESCIANI-TURRONI. *L'œuvre économique d'Augustin Cournot:* R.

ROY. *The Dupuit Taxation Theorem :* R. FRISCH. *The Relation of Prices to Marginal Costs in an Optimum System :* H. HOTELLING. *A Further Note on the Dupuit Taxation Theorem :* R. FRISCH. *A Final Note :* H. HOTELLING.

Social Research.

FEBRUARY, 1939. *The Split in the American Trade Union Movement :* A. BRAUNTHAL. *Germany's Trade Monopoly in Eastern Europe :* M. MITNITZKY. *The Corporative Experiment in Austria :* E. HULA. *Relative and Absolute Justice :* A. BRECHT. *Literature on the Theory of a Socialist Economy :* E. HEIMANN.

Harvard School of Business Administration. Bureau of Business Research.

BULLETIN NO. 108. MARCH, 1939. *Operating Results of Consumer Co-operatives in the United States in 1937 :* C. N. SCHMALZ.

National Bureau of Economic Research.

BULLETIN 72–73. *Incomes from Independent Professional Practice,* 1929–1936 *:* S. KUZNETS and M. FRIEDMAN.

The University of Missouri Studies.

JANUARY, 1939. *Hjalmar Schacht : Central Banker :* K. R. BOPP.

Journal of Farm Economics.

FEBRUARY, 1939. Proceedings Number, including among many others the following Papers :—*Contributions of Agricultural Economics, I, to Farming :* C. E. LADD. *II, to the General Welfare :* H. R. TOLLEY. *Effects of the A.A.A. upon, I, Regional Specialisation :* H. B. ROWE. *II, Farm Organization :* P. E. JOHNSTON. *Public Control of Land Use, I, in Europe :* K. BRANT. *II, in U.S.A. :* G. S. WEHRWEIN. *Measuring Changes in the Demand for Certain Perishable Farm Products :* M. P. RASMUSSEN. *Public Assistance to low-income Farmers, I, in the North :* R. C. SMITH. *II, in the South :* T. R. REID. *Types of Livestock Markets and the Price Structure :* R. C. ASHBY. *Livestock Marketing Methods and Prices :* P. RICHARDS. *Base Periods for Farm Price Studies :* O. C. STINE ; F. A. PEARSON and K. R. BENNETT ; E. L. BUTZ ; L. H. BEAN and P. H. BOLLINGER. *Reducing Costs of Milk Distribution :* L. SPENCER ; J. M. TINLEY ; G. F. DOW. *Graphic Methods in Price Analysis, etc. :* E. J. WORKING ; R. G. HAINSWORTH. *British Empire Trade Agreements in relation to Trade in Farm Products between Canada and U.S.A. :* J. E. LATTIMER.

Wheat Studies (Stanford, California).

MARCH, 1939. *Seasonal Aspects of the European Wheat Trade :* M. K. BENNETT. Overseas shipments of wheat and flour to Europe in August–December have ranged in the past seventeen crop years from 37·40 to 44·55 per cent. of the crop-year shipments. Contrary to a widely held view, autumnal accumulation of import wheat stocks appears to be normal behaviour of European importers in years of large margin of surpluses over requirements, mainly as the result of export pressure in the autumn. In general, August–December shipments to Europe may be expected to approximate 43·3 per cent. of crop-year shipments in years when margins run larger than 250 million bushels. The current crop year, 1938–39, is one of very large margin between surpluses and requirements. August–December shipments may prove to be the largest fraction of the crop-year total recorded in eighteen years. May–July shipments may run larger than usual in relation to January–April shipments. By the end of the crop year, the stage may be set for severe export pressure in the autumn of 1939–40.

Journal des Économistes.

JANUARY–FEBRUARY. *Les ambitions et les difficultés de l'Allemagne :* É. PAYEN. *La Tchécoslovaquie nouvelle :* Pr. BORODAEWSKY. *Le commerce extérieur français en 1938 :* E.P. *Les fonds d'égalisation des changes :* J. DOMANY. *La Banque de France en 1938 :* N. *Le II[e] rapport de la Caisse autonome d'amortissement :* N. *Compte rendu de l'Académie des Sciences morales et politiques (du 16 décembre 1938 au 15 février 1939) :* O. PICHOT. *Le trafic de quelques grands ports français en 1938 :* E. ROULAND. *L'industrie de transformation en Pologne :* C. de KOWNACKI.

Revue d'Économie Politique.

JANUARY–FEBRUARY, 1939. *Vingt-cinq ans d'évolution de la structure économique et sociale française :* C. RIST et G. PIROU.

Bulletin de L'Institut de Recherches Économiques.

FEBRUARY, 1939. *La Belgique en 1938. La conjoncture économique des pays étrangers :* P. ROUSSEAUX.

Revue de L'Institut de Sociologie.

JANUARY–MARCH, 1939. *Les Vertus bourgeoises, leur origine, leur signification :* D. WARNOTTE. *La Conciliation des conflits du travail en Belgique :* L. DELSINNE. *La Consommation et la structure hiérarchique de la société :* J. KLANFER.

Weekly Report of the German Institute for Business Research.

NUMBER 7/8. *Progress of Industrial Production under the Four Years' Plan.*

NUMBER 9/10. *Development of Industrial Labor. Investments in Residential Building in 1938. Greater Germany's Machine Exports in 1938.*

NUMBER 11/12. *Territory and Population of the Former Czechoslovakian State. The German Protectorate Bohemia and Moravia. The New Slovakian State. The Mining Industry in the Former Czechoslovakian State. Economic Development and Economic Policy in the Former Czechoslovakian State.*

NUMBER 13/14. *The German–Roumanian Trade Treaty. The Economic Resources of Roumania. The Productivity of the Roumanian Oil Wells. German–Roumanian Trade Relations. The Treaty—an Example of Fruitful Economic Co-operation.*

NUMBER 15/16. *General Economic Conditions. Wood Consumption in the World Paper. Artificial Silk and Staple Fibre Industries. New Methods of Financing.*

NUMBER 17/18. *Automobile and Motorcycle. The Place of the German Fishing Industry in National Nutrition. The Freight Tonnage Problem in the World War.*

Archiv für Mathematische Wirtschafts- und Sozialforschung.

VOL. V, NO. 1, 1939. *Preisdiskrimination bei willkürlicher Teilung des Marktes :* H. v. STACKELBERG. *Die Verteuerung einer monopolisierten Ware durch eine Verbrauchssteuer :* U. RICCI. *Bemerkungen zum Kalkulationsproblem bei verbundener Produktion :* H. BOLZA. *Der Grenzwert der Erneuerungszahlen :* H. MÜNZNER. *Zur Frage des Beharrungszustandes bei kontinuierlich sich erneuernden Gesamtheiten :* H. HADWIGER. *Der Schwerpunkt der Alterspyramide :* F. SAVORGAN. *Bemerkungen über die Sheppardsche Korrektur :* H. BLÜMEL. *Paretos Funktion und ihre Anwendung zur rationellen Berechnung der Versicherungstarife in der Automobilversicherung :* V. MYSLIVEC.

Weltwirtschaftliches Archiv.

MARCH, 1939. *Die Bedeutung der Kapitalbeteiligung an ausländischen Unternehmungen :* F. G. CONOLLY. The author thinks that an unduly

pessimistic view is generally taken of the decline in foreign investment because too much attention has been paid to "financial" investment (via loans and speculation) and not enough to "direct" investment by creation of, or participation in, foreign enterprises. This is not included in the statistics used to demonstrate the heavy drop in foreign investment in the 'thirties. The author's analysis of "direct" investment abroad is mainly concerned with American investment because this is the only country for which adequate statistical information is available (*pace* the Report on American Direct Investments in Foreign Countries by the U.S. Department of Commerce). The thesis is that both investing and receiving country will benefit from this "direct" connection. *Wieweit sind Volkseinkommen international vergleichbar?:* P. JOSTOCK. The article deals with some problems of international income comparisons raised by a recent attempt of this kind by Mr. Colin Clark in the *Weltwirtschaftliches Archiv*. Apart from the technical sources of error in the collection and the preparation of income statistics, the author instances serious sources of errors intrinsic to the problem, such as climatic differences, differences in the degree of urbanisation, of division of labour, etc. The usual basis of comparison, "income per head," is another source of distorting errors. The real value of such a comparison is, therefore, very limited. *Konjunkturbewegungen in Finnland und schweden 1932–1937:* A. MONTGOMERY. English readers have an opportunity to study the author's views on Sweden's recovery from his book *How Sweden overcame the depression, 1930–1933*. In the present article, he shows that the superficial similarity of the Finnish recovery covers fundamental differences. In Finland it was the export industries that were the mainstay of the upswing (not the home trades, as in Sweden). Also, the Finnish depression had been accompanied with rigid credit restriction and deflation; and this is the author's main explanation of the first-mentioned difference. *Der französische Geldmarkt:* J. MARCHAL and G. GUENSER. *Die Abwertung des schweizer Franken:* E. SCHORER. The article is less concerned with the Swiss pre-devaluation situation and with the technical measures employed than with the problem of the effects. The author can here find no convincing evidence of the beneficial results claimed by those who advocate devaluation either on practical or theoretical grounds. There are also included two "Reports": the first by a Yugo-Slav economist on trends in the foreign trade of the Balkan countries (an elaborate statistical analysis), the second by a member of the Kiel Institute on British India as a market for motor cars.

Jahrbucher für Nationalökonomie und Statistik.

MARCH, 1939. *Die rechtliche Ordnung des ländlichen Grundbesitzes und die gemeinwirtschaftliche Lenkung der Landnutzung:* C. DIETZE. A paper read to the International Congress of Agricultural Economists held in Canada in August 1938. The main subject is the effect of different systems of land tenure on agricultural productivity. On the whole, the author is inclined to defend the value of private initiative. The divergence of agricultural policy in different countries is described. *Verbesserung und Vereinheitlichung des betrieblichen Rechnungswesens:* H. LINHARDT. A description and further development of the "Kontenrahmen" system of business accountancy (first proposed by Schmalenbach) showing its uses for the purposes not only of industrial control, both within the individual firm and for whole branches of industry by associations, but also as a new "information service" for the State for its own political and fiscal purposes. *Die Wohnungswirtschaft in Österreich und im Sudetengau und ihre Eingliederung in die grossdeutsche Wohnungswirtschaft:* F. LÜTGE. A very full statistical description of housing conditions and recent housing policy in the former Austria, with footnotes amounting to a bibliography of the subject. As a minimum plan for the next decade the author demands

the erection of 360,000 dwellings in the territory. The article is to be continued with a corresponding analysis for the Sudeten territory. There is also a "Report" by Professor Laufenburger of Strasbourg, on the Daladier–Reynaud economic policy in France, 1938–39.

APRIL, 1939. *Der zeitliche Aufbau der Produktion und das "Gesetz von der Mehrergiebigkeit zeitraubender Produktionsumwege":* R. GOCHT. This article contains a new formulation of "optimum investment," based on the increasing output per head but diminishing number of workers in consumption good industries as investment increases. To achieve this main object an introductory description of the time structure of production is given which also contains some original features: the "self-contained world of capital goods production" (in replacement of the "circular scheme"), a definition of the period of production (on the lines of Eucken's "Ausreifungszeit") and the demonstration that each line of production contains a "consumption goods" and an "investment" compartment (in replacement of the classification of "trades" as falling within either of the two compartments). *Zur Theorie der Kapitalbildung:* H. SEIDEL. This second article on the theory of capital is to be continued. The first instalment consists mainly in "macrodynamic" and "multiplier" analysis which gives a good survey of recent discussions on these problems, but contains little that is new to readers of the relevant literature in English. *Ein Beitrag zum Gesetz der grossen Zahlen:* W. MAHR. This issue also contains a report, concluded from the March issue, on housing conditions in the Sudeten German territory before its incorporation in Germany, and the housing measures taken since (written by F. LÜTGE, before the total destruction of Czecho-Slovakia). Of particular interest for readers of this JOURNAL is a report on the new English foreign trade initiative, written by G. ALBRECHT. The German readers are warned not to consider the new policy as a piece of "bluff," but as arising from England's real need for more exports. This need is explained in unbiased and friendly terms.

De Economist.

JANUARY, 1939. *De social-economische gevolgen der Pachtwet:* C. M. O. VAN NISPEN TOT SEVENAER. An Act dealing with land tenure and leasing of land came into force on 1st November. Its purpose is threefold: (*a*) to secure a more reasonable rent; (*b*) to provide for longer leases; (*c*) to provide a more reasonable distribution of risk. The article discusses what will be the probable effects on the owner and the tenant. *Theoretische analyse aangaande het verband tusschen stedelijke bebouwingsintensiteit en stedelijke grondprijzen, I:* G. Th. J. DELFGAAUW. In general increased density in building and higher land prices go together from the outskirts to the centre of the town. Is the density high because the prices are high? Or do high ground prices flow from the high density? Either point of view may be defended according to the point of view. By "intensiveness" is meant that much labour and capital are applied to a small amount of ground; and by "extensiveness" is meant that little labour and capital are applied to much ground. It is a problem of proportionality. References are made to the previous discussions of Pierson and Naumann. The question of variations of rent is mathematically discussed on various assumptions. *De zoogenaamde economische kringredeneering:* W. L. VALK. A short didactic note on a point which causes difficulty to students, viz., the apparently circular reasoning of Taussig (*e.g.*) who deduces incomes from the price of final products, but in studying price formation of final products starts from a definite distribution of social income.

FEBRUARY, 1939. *Bij Pierson's hondersten geboortedag:* C. A. VERRIJN STUART. An article published on the occasion of the centenary of the birth of N. G. Pierson (7 February, 1839). The author is not primarily concerned with an estimate of Pierson's position. Since Pierson's death

in 1909, changes in economic conditions have been far-reaching, but on numerous points social-economic history since 1909 has served to confirm Pierson's conclusions. Special attention is devoted to Pierson's interest in monetary and financial questions and in particular to the question of equality of sacrifice in taxation and that of taxable capacity. An unpublished article by Pierson, dating from 1871, on the question of taxation and taxable capacity is printed. *Theoretische analyse aangaande het verband tusschen stedelijke bebouwingsintensiteit en stedelijke grondprijzen, II :* G. TH. J. DELFGAAUW. A continuation of the mathematical discussion of the relation between building intensity and ground rent.

MARCH, 1939. *Enkele opmerkingen over liquiditeit. I.* C. WESTSTRATE. An analysis of the various meanings of liquidity, and in particular on the distinction between the narrower view of "self-liquidation" and the wider view of "shiftability." From the theoretical point of view the narrower conception is more correct; but from the individual's point of view the wider conception is just; also both kinds of liquidity are equally safe. The consequences of the prevalence of the wider view are indicated, and in particular it is shown that it affects conjuncture-movements in two ways. The question of degrees of liquidity is considered, with particular reference to the place of gold. *Het nationale inkomen en de berekening ervan :* O. BAKKER. Arising out of two recent doctorate theses at Amsterdam, the writer discusses the meaning of "national income." It is defined in the first place as "the social product, *i.e.* the sum total of added utility, embodied in goods and services, produced in a closed economy." The writer also discusses the bases of measuring the national income.

APRIL, 1939. *Het Institutionalisme :* J. G. SCHOUP. A survey of the position and achievement of Institutionalism. The article is more concerned with later developments; the school has spent its force, but it has left significant contributions. Special attention is devoted to the modification in the views of W. C. Mitchell and the relation between Institutionalism and quantitative economics. The writer concludes by a suggested grouping of authors who might be regarded as institutionalists or under institutionalist influence. *Enkele opmerkingen over liquiditeit. II :* C. WESTSTRATE. Liquidity of an undertaking consists in agreement in the matter of time at which assets are realisable and at which obligations fall due. But in this matter it is not the period in law, but the actual period in practice that should be the determining consideration. The special case of Banks is considered. *Henry Schultz' levenswerk : Statistieke bepaling der vraagcurven :* J. TINBERGEN. A tribute to Henry Schultz of Chicago (who died recently as a result of an accident) and a review of his chief work, "The Theory and Measurement of Demand."

Rivista Italiana di Scienze Economiche.

OCTOBER, 1938. *La dinamica dei redditi :* L. AMOROSO. A short article, chiefly in the form of differential equations demonstrating that changes in the distribution of incomes correspond to an equation of the parabolic type analogous to the equation used for heat. It is inferred that economic inequalities are spread by diffusion as in the case of thermal phenomena, while demographic inequalities have an undulating motion as in the case of sound, light, or electro-magnetic phenomena in general. *Il piano inglese di difesa alimentare in caso di guerra :* G. MESCHINELLI. A lengthy article dealing with the activities and programme of the British Food Defence Plans Department, and in general with the problem of the supply of food to this country. It is concluded that the dangers of war are at last leading the British people to set aside the errors of the past and to follow the Italian example of treating agriculture as "the primary source of the independence and political security, and the work and the strength of the people."

NOVEMBER, 1938. *L'economia della vita e l'economia dei beni :* F. ORESTANO. A discussion of the relation between economics and ethics.

Lo studio della dinamica economica di alcune aziende agrarie : G. PRONI e S. VIANELLI. An account of statistical investigations into the working of a number of Italian farms between 1925 and 1934. Tables are drawn up for area under crops, value of output, costs, returns, etc.; and in each case figures are given showing not only the arithmetic mean, but also an "index of asymmetry," and indices of absolute and relative dispersion. *L'ordinamento dei tributi nell'economia coloniale :* M. DE LUCA. Rules are suggested for the construction and application of a tax system for a colonial economy.

DECEMBER, 1938. *Produzione e popolazione lavoratrice in regime di mercato libero e di mercato controllato :* P. JANNACCONE. It is contended that the growth of production and the rise in the average standard of living is more likely to accompany an increasing than a decreasing population. The attempt to maintain an excessively high standard of living is likely to reduce not merely the population but also the production of wealth. *Il valore medio esterno della lira prima e dopo gli "allineamenti monetari" :* B. R. RAGAZZI. The depreciation of the external value of the Italian currency in September 1936 acted, it is true, as a stimulus to the export industries, but owing to the policy of autarky and to the general decrease in international trade, this was not reflected in any considerable expansion of Italian exports. Detailed figures are given showing month by month the relative changes in the internal and external purchasing power of the lira. *La politica industriale della Turchia :* V. SANGUINETI. An account of the recent industrial policy of Turkey with special reference to her economic relations with Germany, Great Britain and Italy.

JANUARY, 1939. *Redditi—Profili grafici—Stime :* F. VINCI. Some brief notes on three problems in the theory of statistics. *Primi risultati statistici sul funzionamento degli schedari anagrafici per l'occupazione e l'assistenza dei lavoratori :* G. LASORSA. A lengthy description of a new system of forms, devised for computing the numbers of unemployed, payments for relief, etc., which was adopted experimentally in nine Italian Provinces in July 1937. The experiment is deemed to be very successful and it is proposed that the system should be extended to cover the whole country. *Il problema della denatalità :* S. VIANELLI. A summary of the papers read to the Third Meeting of the Consultation Committee for the Study of Population held at Bologna in November 1938.

Rivista di Storia Economica.

JANUARY, 1939. *La dottrina dei "costi comparati" ed i suoi critici :* A. CABIATI. A vigorous defence of the Ricardian doctrine of comparative costs in international trade, with special reference to recent criticisms put forward by Professor Ohlin and other writers. *Annotazioni a margine di Maffeo Pantaleoni :* L. GANGEMI. The writer reproduces a number of interesting comments written by Pantaleoni in the margin of books in his library. *La magia del credito svelata dal Pinto.* An account of the theory of credit of I. Pinto published in 1771.

Journal de la Société Hongroise de Statistique 1938.

No. 4. *Une lettre iné dite de Ernst Engel à Adolphe Quetelet :* A. JULIN. *Une nouvelle enquête hongroise sur le cancer et les résultats récents des statistiques relatives a cette maladie :* Th. SZÉL. *La statistique historique :* PÁLFY. *Aspects des phénomènes démographiques en Italie :* A. VACCHINI.

Publications of the Statistical Institute for Economic Research State University of Sofia.

No. 2–3, 1938. *The Foreign Trade of Bulgaria after the World War :* I. STEFANOFF. *The Cattle in Bulgaria according to the Censuses of 1926–1934 :* N. K. *Estimation of Farm Cash-Income from Agricultural Production in Bulgaria :* P. P. EGOROFF.

Ekonomist (*Zagreb*).

[Articles printed in Croatian. Short summaries in French.]

JANUARY, 1939. *The Significance of the Regional Agreements and the failure of the Most Favoured Nation Clause :* M. LAMER. *The Investment-Budget as a means of Influencing Business Cycles :* J. TOMAŠEVIĆ. *The Norms of the new International Railroad Conventions :* V. BRAJKOVIĆ. *Economic Pedagogy :* D. CUTVARIĆ.

FEBRUARY, 1939. *The History of Regional Economic Agreements concerning Yugoslavia :* M. LAMER. *The Norms of the new International Railroad Convention :* V. BRAJKOVIĆ. *The Crisis of the Railroads in England :* M. FORJAN.

MARCH, 1939. *Planning and Individualism in Great Britain :* G. G. THOMSON. *Economic Conditions of Czecho-Slovakia before the Collapse :* I. LAFERT. *Some contemporary Problems of the Theory of Central Banks :* D. UZELAC.

APRIL–MAY, 1939. *Private Initiative in Tourism :* S. DRAGOMANOVIĆ. *The Problems of Yugoslavia Textile Import :* V. PERTOT. *The Methods of Marketing Research :* H. J. GLASSMANN. *Total War and War Economics :* M. LAMER.

Ekonomisk Tidskrift.

VOL. 41 : NUMBER I : JANUARY, 1939. The forty-first year of the *Tidskrift* ushers in a new series. Professor Davidson retires from the editorship after a term of office which is surely a record, and in future the *Tidskrift* will be under the management of an editorial board representative of Swedish economic opinion. The present members are Professors Alf Johansson, Erik Lindahl, Bertil Ohlin and Gustaf Åkerman, with Drs. Lundberg and Svennilson as Acting Editors. The articles in the January issue, as befits a first number, are of broad sweep and general interest. Dr. Per Jacobsson leads off with an appreciation of *Professor Davidson*, and his oustanding contribution to Swedish economics in general and to the *Tidskrift* in particular. He is followed by Prof. Röpke on the *Decline of International Economic Relations*. Prof. Röpke emphasises the qualitative rather than the quantitative aspect of the change. Among other points he draws attention to the erratic and unpredictable character of international relations since the close of the period of "international specialisation." He puts in a strong plea for unbiassed and objective research into the implications of the situation created by the change in conditions. Professor Hecksher concludes this part of the issue with a stimulating paper on *Present Day Tendencies*, tracing their origin back to the technological changes of the last half of the last century, particularly the 1870s. From the make-up of this first number of the new series, it appears that notes and book reviews will in future form an important part of the *Tidskrift*. In the present number Dr. Ragnar Sunden discusses the *Swedish Budget*, giving tables which illustrate the working of the "period balancing plan from 1932"; while Dr. G. Böös in a note on *International Trade* discusses the possibility of closer co-operation, not only between the Scandinavian countries, but also with Holland, Belgium and Luxembourg. The book reviews are of considerable substance, and should be of particular interest to English economists since competent reviews of English works by foreigners are not easy to come by. Amongst others, the recent works of Prof. Hansen and Mr. R. G. D. Allen are reviewed by leading Swedish economists. Altogether the editors are to be congratulated on an interesting and well-balanced first number.

Index.

MARCH, 1939. (Supplement). *Government Measures for the Relief of Agriculture in Sweden since 1930.*

Revista de Ciencias Económicas (*Buenos Aires*).

NOVEMBER, 1938. *Expresión matemática de la tasa del interés :* T. S. DE BUSTAMANTE. *La industria azucarera argentina y el proyecto del Poder*

Ejecutivo Nacional del 1° de septiembre de 1938, creando la junta reguladora del azúcar : E. J. FERRARAZZO. *Limitaciones a la imigración por decreto :* A. R. MAZZOCCO. *El azúcar :* G. SIMKIN.

DECEMBER, 1938. *Los gastos y recursos de la Nación :* A. LABOUGLE. *Actividades industriales de post-guerra en Bolivia :* E. VIDAURRE. *El veto del art. 50 de la Ley 12360 :* J. R. BACH. *Ciclo económico de las crisis :* G. A. P. HARDY.

JANUARY, 1939. *Los gastos y recursos de la Nación :* A. LABOUGLE. *La acción social y el impuesto :* R. C. BARCIA. *"Inquadramento" del cooperativismo en el régimen corporativo fascista :* E. BALAY. *Actividades industriales de post-guerra en Bolivia :* E. VIDAURRE.

FEBRUARY, 1939. *Los métodos de ajustamiento mecánico y gráfico con una aplicación del teorema de Tchebycheff :* C. A. BULA. *La Municipalidad de Buenos Aires frente a la ley de sellos :* A. R. MAZZACCO. *"Inquadramento" del cooperativismo en el régimen corporativo fascista :* E. BALAY. *El azúcar :* G. SIMKIN.

The Ways of Economics (Jerusalem).

(Articles printed in Hebrew.)

VOL. I, NO. 1. FEBRUARY, 1939. *Mr. R. F. Harrod on Method of Modern Economics :* M. BENENSOHN. *Confusion in Economic Relations :* D. HOROWITZ. *Problems of Economic Planning :* I. GELFAT. *The Fascist Economic System. Is it Capitalistic? :* S. MASCHKE. *Productivity and Employment in the U.S.A., from F. Mills' Study :* H. YARRI.

Ἐπιθεώρησις Κοινωνικῆς καὶ Δημοσίας Οἰκονομικῆς.

[Articles printed in Greek. Short summaries in French.]

OCTOBER–DECEMBER, 1938. *Les Tabacs helléniques sur le marché britannique :* A. BOYAZOGLOU, S. YOHALAS, M. GRÉGORIADÈS, C. MOSKOFF. *Stéfan Streit, Les Finances Publiques de la Grèce et la Banque Nationale de la Grèce de 1896 à 1911 :* E. TSOUDEROS. *La Personnalité juridique de l'État et son imposition :* G. COFINAS.

Kyoto University Economic Review.

JANUARY, 1939. *On the Budget for the Fiscal Year 1938–39 :* S. SHIOMI. *The Agricultural Policy in War-Time, with special reference to the Maintenance and Expansion of Agricultural Productivity :* Y. YAGI. *On the General Profit Rate :* K. SHIBATA. *Government Industries in the Early Years of Meiji Era :* Y. HORIE.

The Yenching Journal of Social Studies.

JANUARY, 1939. *A Chinese Philosopher's Theory of Knowledge :* CHANG TUNG-SUN. *Consumers' Preference and Planning :* M. F. M. LINDSAY. *Tso Tsung-t'ang : The Farmer of Hsiangshang :* GIDEON CH'EN.

NEW BOOKS

British.

BANERJEE (P.). Railroad Transportation. Agra : Book Agency, 973 Bagh Muzaffar Khan, 1938. 9″. Pp. 103. 3*s.* 6*d.*

[A critical examination of Indian railway problems which is neither very profound nor very closely argued.]

BEVERIDGE (SIR W.). (Ed.). Prices and Wages in England from the twelfth to the nineteenth century. Vol. I. Price Tables : Mercantile Era. London : Longmans, 1939. 10″. Pp. liv + 756. 31*s.* 6*d.*

[To be reviewed.]

BILJON (F. J. VAN). State Interference in South Africa. London: P. S. King, 1939. 8½″. Pp. x + 322. 15*s*.

[To be reviewed.]

BOWLEY (A. L.). The Average and the Individual. Barnett House Papers, No. 22. London: Oxford University Press, 1939. 8½″. Pp. 20. 1*s*.

[In his Sidney Ball lecture, Professor Bowley examines the contribution made by Statistics to those studies of the "modern social, economic, and political questions" which are the objective of the Sidney Ball Fund. The first step is to define the population or universe to be observed, as an aggregate of individuals each of whom possesses certain attributes. Next are considered the attributes which should be or are recorded. These records are used for classifying the population: the process of classification may in some cases lead to the identification of an individual, and in others to a large undifferentiated group. The process of classification is one of abstracting: the abstraction is arbitrary and depends on the point of view of the observer. The first service of statistics is to show the general movements in measurable parts of the social organism. To detect these, the statistician studies the "average" of large groups. An average relates to a class, the members of which have some attributes in common, but vary with respect to some measurable characteristic: it furnishes a sort of representative value of a group of units to each of which a measurement is attached: but by itself, the average is an imperfect characterisation of a group, and statisticians have devised other measures of a group such as the "mean deviation from the average." Many of the properties of two groups can be conveniently summarised by five measurements: their two averages, the two mean deviations, and the coefficients of correlation; the numerical value of the last-named varies from plus to minus one and is a measurement of the degree of relationship or covariation between attributes of the two groups. In the end, the statistician can only define and measure groups or sub-classes, without identifying the individual: he must always come back to the average. But the administrator must consider the individual if he is to avoid standardisation, regimentation and institutionalism. In this country the present tendency is away from the rigidity of standards and institutionalism in the social, as contrasted with the economic, sphere. Democratic countries are primarily built up on the individual; Nationalistic countries are concerned with the type. Concentration on the average leads to a standardised and unprogressive people; the hope of progress depends on giving individuality free play—a dangerous path since injurious variations, given free play, may outweigh those variations which are of value to the community.]

BUTLER (H. B.). The Economic Factor in International Affairs. Manchester: University Press, 1939. 8½″. Pp. 36. 1*s*.

[The Ludwig Mond Lecture delivered before the University of Manchester during February 1939 by the present Warden of Nuffield College, Oxford, and former Director of the International Labour Office.]

CLARK (C.). A Critique of Russian Statistics. London: Macmillan, 1939. 8½″. Pp. 76. 6*s*.

[To be reviewed.]

COLE (C. W.). Colbert and a Century of French Mercantilism. 2 vols. Columbia University Press, 1939. 9″. Pp. ix + 532 and 675. 50*s*.

[To be reviewed.]

COPLAND (D. B.) and JANES (C. V.). Australian Trade Policy, 1932–1937. London: Angus & Robertson, 1939. 8″. Pp. xxv + 454. 10*s*. 6*d*.

[To be reviewed.]

DAVIS (J. S.). On Agricultural Policy 1926–1938. Stanford University, California: Food Research Institute, 1939. 8½″. Pp. 494. $3.00.

[To be reviewed.]

DAWES (C. G.). A Journal of Reparations. London: Macmillan, 1939. 8½″. Pp. xix + 527. 21*s*.

[To be reviewed.]

EINZIG (P.). World Finance 1938–1939. London: Kegan Paul, 1939. 8½″. Pp. xiv + 307. 12*s*. 6d.

[Dr. Einzig's annual study is concerned this year, as was inevitable, mainly with war scares and rearmament finance, but discusses also the economic consequences of the *Anschluss*, of the Munich Agreement and the Czechoslovakian *débâcle*. As always, this book will serve as a most useful work of reference, but even more than its predecessors it is coloured by the political and financial predilections of its author.]

EXLEY (H. J.) and MAULDON (F. R. E.). Employment and its Seasonality in Tasmania. Tasmania: State Finance Committee, 1938. 11″. Pp. 19.

[A careful statistical inquiry by the Deputy Commonwealth Statistician and the Economic Adviser of the Tasmanian Government. Since 1936 information has been collected from individuals and undertakings paying wages-tax regarding the number of workers in employment at the middle of each month. So far as can be judged from the comparatively short period for which satisfactory data are thus available, with an employable total of about 63,150 wage-workers, the seasonal variation of employment is about 5,000. In most cases the maximum employment is in March, the minimum in July.]

FENELON (K. G.). Management and Labour. London: Methuen, 1939. 7″. Pp. 276. 5*s*.

[To be reviewed.]

FIRTH (R.). Primitive Polynesian Economy. London: Routledge, 1939. 10″. Pp. vi + 387. 15*s*.

[To be reviewed.]

FURNIVALL (J. S.). Netherlands India: A Study of Plural Economy. London: Cambridge University Press, 1939. 9″. Pp. xx + 502. 25*s*.

[To be reviewed.]

GIBBON (G.) and BELL (R. W.). History of the London County Council 1889–1939. London: Macmillan, 1939. 8½″. Pp. xxi + 696. 21*s*.

[To be reviewed.]

GINSBURG (L.). Parenthood and Poverty. London: N.F.R.B., 1939. 8½″. Pp. 56. 1*s*.

[A most useful short popular survey of the population problem and of the inter-relations of poverty and the size of the family. The complicated ideas of net-reproductivity are explained with admirable lucidity; in estimating future changes the dangers of too extended extrapolation are stressed; the effects of an ageing population are briefly indicated. Following modern fashion, the increasing diseconomies and inflexibilities are emphasised. (Does not the increased rate of retirement tend to be overlooked?) Final sections study population policy in other countries, rightly warning a reader to beware of confusing anticipations of marriages or births with more permanent increases of their numbers, and plead for a policy in this country which will prevent the coincidence of a family sufficient to replace the existing population with descent below the poverty line. In particular, children's allowances, school meals and improved housing are advocated.]

GRONDONA (L. ST. C.). National Reserves for Safety and Stabilization. London: Allen & Unwin, 1939. 8″. Pp. 190. 7*s.* 6*d.*

[The author advances a scheme, based partly on war dangers, partly on the disadvantages existent in peace time from the exaggerated fluctuations of commodity prices, for the purchase and storage of raw materials. An introduction by Mr. Harrod examines the many theoretical advantages of such a scheme.]

GUILLEBAUD (C. W.). The Economic Recovery of Germany from 1933 to March 1938. London: Macmillan, 1939. 8½″. Pp. xiv + 303. 10*s.* 6*d.*

[Reviewed in this issue.]

HARRISON (G.) and MITCHELL (F. C.). The Home Market. London: Allen and Unwin, 1939. 10″. Pp. xvi + 152. 12*s.* 6*d.*

[This new revised edition of a work that has proved itself an invaluable tool to all concerned, whether commercially or academically, with British statistics, has been edited by Dr. M. A. Abrams. The new edition includes some new matter, in particular in relation to future population trends and the number and size of families. Of particular importance to advertisers are the chapters on regional indices of business activity and on the regional distribution and cost of newspaper advertising.]

HEILPERIN (M. A.). International Monetary Economics. London: Longmans, 1939. 9″. Pp. xiv + 280. 15*s.*

[To be reviewed.]

HEUSER (H.). Control of International Trade. London: Routledge, 1939. 8½″. Pp. x + 282. 12*s.* 6*d.*

[To be reviewed.]

HIMADEH (S. B.) (Ed.). Economic Organization of Palestine. Beirut: American University, 1938. 9½″. Pp. xxi + 602.

[A detailed and valuable collaborative survey, organised by the Social Science Research Section of the American University of Beirut. The editor is responsible for a study of the natural resources and of the industry of the country. The population, its density, occupations and vital statistics, the extent of immigration and emigration are examined by Mr. L. G. Hopkins; agriculture by Mr. M. Brown; land tenure by Mr. M. J. Doukhan; transportation and communication and foreign trade by Husni Sawwaf; internal trade by B. Veiemanas; the monetary and banking system by G. Hakim and M. Y. El Hussayni; the fiscal system by M. F. Abcarius. Appendices contain useful statistical material.]

HISKETT (W. R.) and FRANKLIN (J. A.). Searchlight on Social Credit. London: P. S. King, 1939. 8½″. Pp. x + 173. 8*s.* 6*d.*

[This is a most careful examination and criticism of the Douglas theories written by two authors who have started, as so many have, with a prejudice in favour of the theories which they have in the end found themselves unable to accept in total, and with universal as distinct from occasional application. For those who are debarred, whether by its difficulty or its inaccessibility, from Frank Ramsey's critique of these theories (published not in the ECONOMIC JOURNAL, as Mr. Kingsley Martin's Introduction suggests, but in the ephemeral columns of *The Cambridge Magazine*, Vol. XI, No. 1, in January 1922) the present volume represents just about the best and clearest refutation available.]

History of the Communist Party of the Soviet Union. London: Collet, 1939. 8½″. Pp. xii + 364. 1*s.* 6*d.*

[A quite frankly propagandist work, with no great literary or analytical merit, which may nevertheless be of some slight service to those who prefer to study the economic history of Russia through the partisan eyes of enthusiasts rather than in the sometimes over-neutral, sometimes almost equally partisan, pages of independent writers.]

JAGANNATHACHARI (C.). Report on the Working of Prohibition in the Salem District. Annamalai University, 1939. 7″. Pp. 104.

[This investigation of the effects of prohibition upon an Indian district in Southern Madras has been conducted under the direction of Dr. Nayudu, Professor of Economics in Annanalai University. The inquiry shows, apart from moral and psychological changes that cannot be statistically measured, marked improvements in the standard of life. Expenditure on food and clothing has increased, but much of the money which formerly went on drink is now devoted to betting, cinemas and hotels.]

JATHAR (G. B.) and BERI (S. G.). Indian Economics, Vol. II. London: Oxford University Press, 1939. 9″. Pp. xiii + 672. 9*s*.

[This fifth edition of Vol. II, mainly concerned with problems of industrial and labour organisation, with internal and external trade, and with banking and fiscal problems, has been brought up to date in detail at a great number of points.]

Karachi Cotton Annual 1937–38. No. 5. Karachi: The Cotton Association, 1939. 9½″. Pp. 61.

[This contains a report on the trade of the year 1937–8 and useful statistical data.]

KNIGHT (A. W.). What's Wrong with the Economic System? London: Longmans, 1939. 8½″. Pp. 179. 8*s*. 6*d*.

[Economists never cease to lament the plight of their subject, so it is not surprising that scientists should sometimes feel compelled to intervene. This time the author is an engineer, and having this advantage over the rest of us, he is in a position to state (he would claim to prove) the following propositions: a constant proportion of 19 per cent. of the total national income is saved when general unemployment is zero; the multiplier (he does not give it this name) is always equal to 3·6 (his reasoning is confirmed by statistics relating to the single year of 1933). He claims, also, to have anticipated Mr. Keynes with regard to the equality of saving and investment, and shows a familiarity with the *General Theory* unusual in such writers.]

KOCK (M. H. DE). Central Banking. London: P. S. King, 1939. 8½″. Pp. xiv + 354. 15*s*.

[To be reviewed.]

KRAL (A. VON). Kamâl Atatürk's Land. London: P. S. King, 1939. 9″. Pp. xi + 283. 7*s*. 6*d*.

[A translation of a book originally published in 1935 and recently revised. The author was formerly Austrian Envoy Extraordinary. He has attempted to give a strictly objective and impartial account of the recent history and reforms in Turkey, which if sometimes somewhat pedestrian, yet contains much interesting detail. The chapters concerned with economic development do not go deep, but serve to indicate the broad outlines of recent policy.]

MCGREGOR (A. G.). The Barriers to Liberalism Must Be Removed. Edinburgh: Scottish Liberal "Right Wages" Committee, 1939. 8″. Pp. 32. 6*d*.

[Liberalism can only be restored through further restriction—*i.e.* by compulsion of employers to pay *right wages*. Wages are "right" when they keep the price level steady.]

MACGREGOR (D. H.). Public Aspects of Finance. London: Oxford University Press, 1939. 7″. Pp. 137. 5*s*.

[To be reviewed.]

MACLYSAGHT (E.). Irish Life in the Seventeenth Century: After Cromwell. London: Longmans, 1939. 8½″. Pp. vii + 463. 12*s*. 6*d*.

[To be reviewed.]

McGuire (E. B.). The British Tariff System. London: Methuen, 1939. 8½″. Pp. v + 312. 7*s*. 6*d*.

[To be reviewed.]

Mises (R. von). Probability, Statistics and Truth. London: William Hodge, 1939. 8½″. Pp. xvi + 323. 12*s*. 6*d*.

[A series of lectures elaborating the author's well-known view that the concept of "probability" ought to be confined to those cases which are supported by statistics of frequency.]

Mukerjee (R.) (Ed.). Economic Problems of Modern India. London: Macmillan, 1939. 9″. Pp. xix + 443. 10*s*. 6*d*.

[To be reviewed.]

Narayanaswamy Naidu (B. V.) and Vaidyanathan (P.). The Madras Agriculturists' Relief Act—A Study. Annamalainagar: University Press, 1939. 9½″. Pp. 113.

[The main purpose of the Act was to give relief from agricultural debt. No debt incurred by an agriculturist after March 22nd, 1938, may bear interest exceeding 6¼ per cent. On debts incurred before October 1st, 1932, interest outstanding at October 1st, 1937, is wiped out, but the outstanding principal remains to be paid off. Where an agriculturist has paid in interest and principal twice the original debt, it is wiped out. Where less than twice has been paid, only such sum as will bring principal and interest up to twice the debt is due. On debts incurred since 1932 interest is calculated at 5 per cent. and past excesses over that rate are deductible from future payments. The authors of this study conclude that, while the Act has in general worked well and achieved in part at least the end of agricultural rehabilitation, it needs amendment in detail and to be supplemented by other measures.]

Peaceful Change. Paris: International Institute of Intellectual Co-operation, 1938. 9½″. Pp. 685. 15*s*.

[To be reviewed.]

Paterson (D. D.). Statistical Technique in Agricultural Research. London: McGraw-Hill, 1939. 9″. Pp. ix + 263. 18*s*.

[To be reviewed.]

Postan (M. M.). The Historical Method in Social Science. London: Cambridge University Press, 1939. 7½″. Pp. 38. 1*s*. 6*d*.

[Professor Postan's Inaugural Lecture as Professor of Economic History in the University of Cambridge.]

Proceedings of the First Session of the Indian Statistical Conference held in Calcutta, January 1938. Calcutta: Statistical Publishing Society (P. S. King), 1938. 11″. Pp. 311.

[Of the six sections of the Conference, one was devoted to Economic Statistics and a second to Standardisation in Industry. In the former papers were read, amongst others, by Dr. V. K. R. V. Rao on the adequacy of India's food supply, by H. and J. C. Sinha on India through the depression, by G. V. Krishnaswany on the size of Indian cotton mills, and Dr. B. N. Ganguli on the significance of certain concepts in agricultural statistics.]

Report on the Location of Industry in Great Britain. P.E.P.: 16 Queen Anne's Gate, London, S.W.1, 1939. 10″. Pp. 314. 10*s*. 6*d*.

[Reviewed in this issue.]

Horace Plunkett Foundation. Year Book of Agricultural Co-operation 1939. London: P. S. King, 1939. 8½″. Pp. 558. 15*s*.

[This invaluable annual includes as usual studies by local experts of the progress of co-operation in all the greater and very many of the lesser countries

of the world. In addition it contains an obituary essay on Sir Horace Plunkett as Co-operator, by Mr. H. F. Norman, and the two papers, on "Agricultural Co-operation in the World To-day" and on "Co-operation and the State" delivered to the Imperial Conference on Agricultural Co-operation at Glasgow in July, 1938, by Mr. Fay and Professor Ashby respectively.]

QUINN (D. B.) (Ed.). The Port Books or Local Customs Accounts of Southampton for the Reign of Edward IV. Vol. II. 1477–1481. Southampton: Cox and Sharland, 1938. 9½″. Pp. xlii + 226. 28*s*.

[To be reviewed.]

RAO (V. K. R. V.). An Essay on India's National Income 1925–1929. London: Allen & Unwin, 1939. 7″. Pp. 170. 6*s*.

[To be reviewed.]

ROBBINS (L.). The Economic Basis of Class Conflict and other essays in political economy. London: Macmillan, 1939. 8″. Pp. xiv + 277. 6*s*.

[To be reviewed.]

ROBSON (W. A.). The Government and Misgovernment of London. London: Allen & Unwin, 1939. 8½″. Pp. 469. 15*s*.

[To be reviewed.]

SCHUMANN (C. G. W.). Structural Changes and Business Cycles in South Africa, 1806–1936. London: P. S. King, 1938. 9″. Pp. xix + 397. 16*s*.

[The first part of this investigation by the Professor of Commerce at the University of Stellenbosch, which has been financed by the government's Research Grant Board, reviews the economic development of South Africa from the British occupation of the Cape in 1806 to the eve of Union in 1909. Professor Schumann makes little attempt to supplement the findings of other students. There is, for instance, no index of prices for this period. It would have been useful if he could have had series compiled of wholesale and retail prices, from the Cape Blue Books and the newspaper files of the last hundred years, so that an attempt could have been made to construct simple indices, at least for the main towns. For the period since 1910 three attempts are made to supplement the statistical series which are here collected from the various government sources. Monthly indices are shown graphically of the price movements of industrial shares (comprising five companies from 1910 to 1923, eleven from 1924 to 1937 and again fourteen from 1930 to 1937); and the official index of thirty gold mining shares is plotted against separate curves for low-grade and high-grade mines and for a group of financial houses. Unfortunately, the actual figures are not tabulated. Secondly, a table is compiled showing the amount and value of output of the principal agricultural and pastoral products in the years 1910–11, 1917–18, 1924–25, 1929–30 and 1934–35 (the figures having been specially estimated by the Division of Economics and Markets of the government Department of Agriculture). Thirdly, estimates are given of the national income for the same years, calculated on the same basis as those made for 1917–18 by the late Professor Lehfeldt and for 1923 by the Economic and Wage Commission, but with one or two differences which are stated but not reasoned, and which have the effect of inflating the totals. For the rest, Professor Schumann is content to state what official figures exist and to conclude that more detailed statistical research needs to be undertaken. In conclusion, he urges that an Institute of Economic and Business-Cycle Research be established in South Africa, but he does not suggest under what auspices it should be created.]

SEGAL (C. S.). Penn'orth of Chips. London: Gollancz, 1939. 7½″. Pp. 128. 3*s*. 6*d*.

[This book is a much more serious contribution to knowledge than its catch-penny title would suggest. The author, a London school-master who has spent his life teaching in poor districts and much of it in teaching classes of backward boys who owed their retardation to poverty, has been led to examine the social

and economic background from which his pupils have come. The book suffers from the excessive modesty of its author. If Mr. Gollancz could have induced him to delete all his quotations from other authorities, and to devote the whole of the space thus saved to telling us more about the North Kensington class of backward boys, their family histories, their housing and feeding, their difficulties and progress, we should have had a fascinating book. As it is, his quotations are as flat as his own writing is vivid.]

South-Eastern Europe. A Political and Economic Survey. London: Royal Institute of International Affairs, 1939. 9″. Pp. xvi + 203. 5*s*.

[This very useful survey of South-eastern Europe has been prepared jointly by the London–Cambridge Economic Service and the Royal Institute of International Affairs. The first, political, section is the work of the staff of the Institute. The second, economic, section is the work of Dr. Benham and Mr. Scitovsky. The studies of each individual country follow a uniform plan; they are mainly statistical and factual and present precisely the data that any firm trading with those countries will wish to possess. A limited number of copies of the survey are available, bound in paper, to members of the Royal Economic Society at the price of 4*s*. from The London and Cambridge Economic Service, The London School of Economics, Houghton Street, Aldwych, London, W.C. 2.]

STAMP (LORD). Christianity and Economics. London: Macmillan, 1939. 7½″. Pp. x + 194. 5*s*.

[To be reviewed.]

STEWART (W. D.). Dictatorship or Democracy? London: P. S. King, 1939. 8½″. Pp. xiv + 121. 7*s*. 6*d*.

[A number of lectures given at different times under the auspices of the University Extension Movement and the Workers' Education Association. The two specifically concerned with economic subjects, one on the rise of political economy, the other on the ideology of the industrial revolution, while mildly stimulating, scarcely scratch the surface of their subjects.]

SYKES (J.). A Study in English Local Authority Finance. London: P. S. King, 1939. 8½″. Pp. vi + 307. 12*s*.

[To be reviewed.]

TINBERGEN (J.). A Method and its Application to Investment Activity. Geneva: League of Nations Economic Intelligence Service (Allen & Unwin), 1939. 9½″. Pp. 164. 3*s*. 6*d*.

[To be reviewed.]

VAN ZEELAND (P.). Economics or Politics? London: Cambridge University Press, 1939. 7½″. Pp. 57. 2*s*. 6*d*.

[In his Marshall Lecture, delivered at Cambridge in October 1938, M. Paul van Zeeland pleads for a return to freer conditions of trade and discusses the plan that is associated with his name. He faces all the very real difficulties of countries which have led them into restrictions, and argues that give as well as take is necessary if any real improvement is to be secured. He urges that the initiative in freeing trade, and in calling a conference to examine the problems, should be taken by the three great democracies.]

VARGA (E.) and MENDELSOHN (L.) (Ed.). New Data for V. I. Lenin's "Imperialism, the Highest Stage of Capitalism." London: Lawrence & Wishart, 1939. 8½″. Pp. vii + 322. 6*s*.

[To be reviewed.]

WAITE (W. C.) and CASSADY (R.). The Consumer and the Economic Order. London: McGraw-Hill, 1939. 9″. Pp. x + 389. 21*s*.

[To be reviewed.]

WITHERS (H.). The Defeat of Poverty. London: Jonathan Cape, 1939. 8". Pp. 287. 7*s.* 6*d.*

[To be reviewed.]

WRIGHT (C. M.). Economic Adaptation to a Changing World Market. Copenhagen: Munksgaard, 1939. 9". Pp. 305. 10*s.* 6*d.*

[To be reviewed.]

American.

ABRAMOVITZ (M.). An Approach to a Price Theory for a Changing Economy. New York: Columbia University Press (P. S. King), 1939. 8½". Pp. 158. 10*s.*

[To be reviewed.]

BUROS (O. K.) (Ed.). Research and Statistical Methodology: Books and Reviews, 1933–1938. New Brunswick: Rutgers University Press, 1938. 9". Pp. 100. $1.25.

[This index includes extracts from reviews of the major works upon statistical method that have appeared between January 1933 and November 1938. It is, of course, not confined to economic statistics and the latter represent a comparatively small part of the whole. An index of this kind is valuable only if it includes all important works. It is doubtful whether by that test the present volume is justified. It includes not a few second-rate books. It excludes almost all studies in population growth, Schultz's great book on demand, and Frisch on confluence analysis.]

CLOUGH (S. B.). France, A History of National Economics, 1789–1939. New York: Scribner, 1939. 9". Pp. ix + 498. $3.50.

[To be reviewed.]

DONALDSON (M. H.). Labor Problems in the United States, New York: Longmans, 1939. 8". Pp. x + 289. $1.00.

[An elementary study designed to meet the needs of those "who want perspective rather than the elaboration of a large treatise." It is concerned rather with instructions and legislation than with analytical studies of the problems involved, chiefly those of collective bargaining and accommodation.]

ELY (R. T.). Ground under our Feet. New York and London: Macmillan, 1938. 8½". Pp. xi + 330. 12*s.* 6*d.*

[Professor Ely, born in 1854, was a rebel when he helped to found the American Economic Association in 1885. He is still a rebel against all the orthodoxies of economics to-day. His autobiography is only incidentally concerned with the growth of economic ideas, and deals more with the politics and disruptions of economic studies than with their equilibria. His description of the economics of his youth is headed "a crust had formed over political economy." He has spent his life in de-crusting it (may one suspect that some remains even yet). This lively and entertaining volume is rich in stimulating *obiter dicta*, but the reader must search elsewhere for extensively argued propositions or a carefully developed philosophy.]

FELDMAN (H.) and SMITH (D. M.). The Case for Experience Rating in Unemployment Compensation and a Proposed Method. New York: Industrial Relations Counselors, 1939. 9". Pp. viii + 61. $1.

[Under the Social Security Act the separate states are permitted by federal law to set up differential rates of taxes for the unemployment scheme, that are in some degree related to an employer's success in keeping his employees from unemployment. This is known as experience rating. The authors find them-

selves very strongly in favour of the extension of this system to all States, because of the beneficial effect they believe it will have on employment, and they put forward a special scheme of their own.]

GLOVER (KATHERINE). America Begins Again. London: McGraw-Hill, 1939. 8″. Pp. xv + 382. 12*s.* 6*d.*

[An account of the way in which American natural resources have been abused by an advance which took no thought of the future. In a full account of the conservation movement there is a chapter devoted to the T.V.A. and another to the Columbia River Basin projects. The 170 illustrations are of more value than the text.]

GRIFFIN (J. I.). Strikes. A Study in Quantitative Economics. New York: Columbia University Press (P. S. King), 1939. 9″. Pp. 319. 16*s.*

[To be reviewed.]

HARDY (C. O.). Odd-Lot Trading on the New York Stock Exchange. Washington, D.C.: Brookings Institution, 1939. 8½″. Pp. 192. $1.50.

[On the New York Stock Exchange the unit of trading in almost all stocks is 100 shares. Orders for smaller quantities and sales or purchases of remainders of larger orders are turned over to specialist dealers in "odd lots" who buy and sell at prices fixed in relation to the current round-lot price. Of the whole business, about 97 per cent. is in the hands of three firms who joined both in promoting and facilitating with all the information at their disposal the present inquiry. The particular problems of costs and profits, of taxation of stock transfers, and of "with-holding" are discussed in their special relations to the odd-lot business.]

HARWOOD (E. C.). Cause and Control of the Business Cycle. Cambridge, Mass: American Institute for Economic Research, 1939. 8″. Pp. 224. $2.00.

[This is a somewhat more serious piece of work than many of its predecessors from the same Institute, but the confusions and misunderstandings remain many, and several authors would be surprised at the interpretations placed upon their writings. Dr. H. Villard, for example, on the strength of his controversy with Dr. Moulton regarding the equality or inequality of savings and investment, becomes a protagonist of the thesis that "the oversaving theory of the trade cycle should be considered a dead letter."]

HOON (E. E.). The Organization of the English Customs Systems 1696–1786. New York: Appleton-Century Co., 1939. 9″. Pp. viii + 322. 18*s.*

[To be reviewed.]

The Kress Library of Business and Economics. No. 1. Boston, Mass: Baker Library, Harvard Graduate School of Business Administration, 1939. 10½″. Pp. 53.

[This publication of the Kress Library forms a memorial to Professor Foxwell. A brief foreword by Dr. Donham is followed by a valuable biographical note by Miss Audrey Foxwell, daughter of the Professor, and by an excerpt from the obituary written by Mr. Keynes and published in the ECONOMIC JOURNAL of December, 1936. An essay by Professor Usher on the present significance of the earlier literature of economics and a postscript by Dr. A. H. Cole of the Harvard Business School Library are added.]

Kress Library of Business and Economics No. 2. The Vanderblue Memorial Collection of Smithiana. Boston, Mass: Harvard Graduate School of Business Administration, 1939. 10½″. Pp. 68.

[This is a catalogue of the Collection presented to the Harvard Business School by Dr. Homer V. Vanderblue in memory of his father, and deposited in the Kress Library of Business and Economics, preceded by an essay by Pro-

fessor C. J. Bullock. Since the Foxwell Collection also belongs to the Kress Library, some items from that have been incorporated in this Collection. The "Muir" portrait is reproduced as a frontispiece. It constitutes a comprehensive bibliography of the writings of Adam Smith, and particularly of translations into other languages. The more important works relating to Adam Smith are also included. It aims not merely at giving a catalogue of the actual volumes in the library, but includes items not yet there, so far as knowledge of these is available, though these gaps are remarkably few in number. This very complete library—so far as the various editions and translations of the *Wealth of Nations* are concerned, it is nearly perfect—was collected personally by Dr. Vanderblue, formerly Professor of Business Economics at the Harvard Graduate School, and now honorary curator of early economic literature for the Baker Library.]

KUZNETS (S.), COPELAND (M. A.), HABERLER (G.), and others. Studies in Income and Wealth. Vol. II. New York: National Bureau of Economic Research (London: Macmillan), 1938. 9″. Pp. xii + 331. 14*s*.

[To be reviewed.]

LEAVENS (D. H.). Silver Money. Colorado: Cowles Commission for Research, 1939. 9½″. Pp. xix + 439. $4.00.

[To be reviewed.]

MANSFIELD (H. C.). The Comptroller General. New Haven, Connecticut: Yale University Press (Oxford University Press), 1939. 9″. Pp. viii + 303. 14*s*.

["On June 30, 1936, John Raymond McCarl, the first Comptroller General of the U.S.A. retired. . . . Since then he has found two chambers of commerce and a college professor to listen to him. In this somewhat anticlimatic fashion he dropped into obscurity from what had become one of the most influential, if least understood, administrative positions in the national government. Not even the President's proposal to abolish the office . . . sufficed to revive public interest in him." Important as his functions were, it is doubtful whether this large, detailed, scholarly and sometimes witty monograph will succeed where the President so signally failed.]

MERIAM (L.) and SCHMECKEBIER (L. F.). Reorganization of the National Government. What does it involve? Washington: Brookings Institution, 1939. 8½″. Pp. xii + 272. $2.00.

[The book falls into two halves: an analysis of the problem by Mr. Meriam, and a brief history of reorganization efforts by Mr. Schmeckebier. It is concerned with the needs, possibilities and limitations of reorganization, the extent of overlapping of departments and the possibilities of retrenchment and coordination and with the executive control of administration.]

MORGAN (W. L.). The Family Meets the Depression. A Study of a Group of Highly Selected Families. Minnesota: University Press (Oxford University Press), 1939. 9″. Pp. x + 126. 9*s*.

[The circumstances of several hundred normal American families had been studied by Miss Lindquist in 1927. Miss Morgan's investigation covers 331 of the same families in 1933 and is designed to indicate the effect of the depression on normal family life. The questions related to economic status, management of household, health of family, general activities and family relationships. The results, whatever their nature, were almost all classified in statistical form, so that we learn that the percentage of mothers reporting thumb sucking fell from 2·82 in 1927 to 0·00 in 1933. But it is a serious and painstaking piece of work.]

Problems of the National Labor Relations Board. Washington: D.C.: American Association for Economic Freedom, 1939. 8½″. Pp. 66.

[The association responsible for this pamphlet includes, besides representatives of the churches and the public, names as familiar, amongst others, as those of Wesley Mitchell and Paul Douglas. Their purpose is to make generally available

some of the results of the careful and dispassionate studies of the workings of the Wagner Act published in the Bulletin of the International Juridical Association. The present pamphlet is concerned with the rivalries between the A.F. of L. and the C.I.O., with the difficulties of fair hearings in N.L.R.B. cases, with unfair employers and government contracts, with freedom of speech and condonation of force, and with State labor relations boards. A last moment prefatory note comments also on the probable effects of the recent Supreme Court decisions in the Fansteel, Sands, and Columbian Enamelling cases.]

Roos (C. F.), and Others. The Dynamics of Automobile Demand. New York, 1939. 11″. Pp. 139.

[These studies of the elasticity of demand for automobiles, sponsored by the General Motors Corporation, are based on papers presented at a joint meeting in Detroit of the American Statistical Association and the Econometric Society. Mr. S. L. Horner first poses the problem, rightly emphasising the difficulties involved and distinguishing a study of the elasticity of demand for the products by the industry as a whole from that for an individual producer. The core of the book is provided by a most careful and thorough-going analysis by Mr. C. F. Roos and Mr. V. von Szeliski. Variations of demand depend not only upon absolute price, but also upon a number of other factors, of which the principal are variations of national income, the prices of alternative goods, used car prices, replacement needs, and seasonal and new model influences (it is a commentary upon the difference between U.S.A. and G.B. that taxation appears only as a factor influencing the size of the supernumerary income available). These various factors are all closely examined and evaluated. The result is to suggest an income elasticity between 1·5 and 2·5 and a price elasticity probably between 1·0 and 2·0. This central study is followed by a paper on hedonic price indexes by Mr. A. T. Court of the Automobile Manufacturers Association. The author is anxious to produce a price series which will adequately take account of the increased satisfactions due to improvements in quality which have taken place. Most economists will probably agree with the criticisms advanced in the subsequent discussion by Mr. L. H. Bean, but a point of substance surely remains. Mr. Roos' paper nowhere discusses the very significant variations in average price per car sold during boom and depression (variations considerably greater than those of buying a car of uniform quality). It is an inevitable complication of any study of demand for a non-homogeneous product that part of the fundamental elasticity takes the form of improving or diminishing quality. It is in many cases largely a matter of terminology whether we discuss, for example, the relation of the number of houses built to the cost per house, or the relation of the number of cubic feet built to the cost per cubic foot. The elasticities in the two cases will almost certainly be widely different, and from the point of view of policy, of employment and of profits, the latter may be fully as important as the former. Mr. Roos is however concerned only with numbers of cars. The study is completed by a discussion of its implications by Mr. S. M. Dubrul of the General Motors Corporation. He urges that a price policy designed to maintain an unchanged output is impracticable because revenue will fall below marginal cost. (It is interesting to note that, on a car selling at $646, he estimates variable costs at $548, non-variable cash costs at about $38 and non-variable non-cash costs, mainly depreciation, at no more than $6.) But while no economist will be surprised that he reaches the conclusion that, when demand declines, output cannot profitably be maintained by price cutting, they will look a little askance when on one and the same page (p. 132) he seeks to refute a charge of oligopolistic pricing and applies to the sales of a single firm the elasticity calculated by Mr. Roos for the industry. May we be excused for pleading that the shortest way to monopoly price is to teach manufacturers to treat their own elasticity as identical with that of the industry?]

Welfling (W.). Savings Banking in New York State. Durham, N.C.: Duke University Press, 1939. 9″. Pp. xiii + 205. $3.00.

[Mutual savings banks, though they exist in only seventeen states, have held in recent years almost one-fifth of all the deposits in all the banks in the country. Yet their study by academic economists has been neglected. The author, a member of the Department of Economics of Duke University, describes their early history and development prior to the general law of 1875; their operation before, during and since the War under that general law; and finally the effects of the depression and recovery of the 1930's.]

WOODS (R. L.). America Reborn. A Plan for Decentralization of Industry. London: Longmans, 1939. 8″. Pp. 376. 15*s*.

[The author is impressed with the evil effects of industrial centralization, in particular as it affects the geographical distribution of wealth and the cost of social services. He pleads for a scheme, reminiscent of that advocated by Mr. Ford, of small industrial units, widely spread, and with workers in some cases alternating between industry and agriculture. Both the effects of centralization and the forces, sometimes rational, sometimes irrational or artificial, which have led to it are carefully considered.]

WOYTINSKY (W. S.). Seasonal Variations in Employment in the United States. Washington: Social Science Research Council, 1939. 9″. Pp. x + 154.

[To be reviewed.]

French.

LHOMME (J.). L'Impôt sur le revenue en Angleterre. Paris: Librairie Générale de Droit et de Jurisprudence, 1939. 9″. Pp. 468. 75 *fr.*

[This is a substantial and comprehensive account of the British system of income taxes. It is divided into three sections—an historical sketch of British income tax from the beginnings down to 1938; a middle section which occupies more than two-thirds of the book, on the legal and administrative structure of the levies, and a short concluding appreciation. Although announced as a "Theoretical and Practical Treatise," the first epithet must be understood in a legal and not an economic sense. But it is not without significance that such a work should come from France to-day. Professor Lhomme is an experienced writer on public finance and his conclusions are not devoid of interest for the economist. Although he is inclined to exaggerate the practical difficulties caused by the confusion of income-tax law, he is perfectly right in insisting that the important Report on the Codification of the Income Tax, the result of deliberations extending from 1927–36, should be taken seriously—of which there seems little prospect at present. In the last section Professor Lhomme makes some tentative comparison between British and French national income per head and effective income-tax rates. The British system is apparently about three times as productive of revenue as the French, and Professor Lhomme is no doubt right in ascribing an important part in this difference to deduction at the source, and to the greater certainty of the British tax basis. But there are also striking differences in national income per head and in the rate of tax progression. According to Professor Lhomme national income per head in France is only half that of Britain. But the British figures which he uses (the source of which is not given), are mainly higher than Colin Clark's, and on the other hand the French ones appears to approximate only to what one French writer at least has calculated as "total private incomes." The differences in the wealth of the two countries may therefore be exaggerated. On the other hand, although he acknowledges that the British system is a great deal more progressive and less regressive than the French, Professor Lhomme still tends somewhat to exaggerate the burden of British income tax on the ordinary citizen, by regarding the standard rate as normal. It is, of course, far above the rate paid by the majority of taxpayers. Thus, for instance, in 1935 with a standard rate of 4*s*. 6*d*. married couples with three children and an income of £400 were below the exemption limit. Even at the surtax level of £2000 their effective rate of income tax was only 3*s*. in the £.]

MILHAU (J.). Prix et Production en Agriculture. Paris: Sirey, 1938. 7½″. Pp. xiii + 72. 20 *fr.*

[A brief and mainly theoretical discussion of agricultural prices in conditions of elastic and inelastic demand.]

PERROUX (F.). I. Leçons d'économie politique. II. La continuité de la pensée économique (supplement). Paris: Domat-Montchrestien, 1938. 10″. Pp. 993. 124 *fr.*

[These consist of photographically reproduced typescripts of elementary first-year lectures. They are more in the form of short lecture notes than of continuous literary narrative.]

PIROU (G.). Les Nouveaux courants de la théorie économique aux États-Unis. Vol. I. Les Précurseurs. Paris: Domat-Montchrestien, 1939. 9″. Pp. 347. 85 *fr.*

[These lectures deal with the writings and ideas of Veblen, J. M. Clark, and H. L. Moore.]

RIST (C.) and PIROU (G.). De la France d'avant guerre à la France d'aujourd'hui. Paris: Sirey, 1939. 10″. Pp. xxiv + 594. 80 *fr.*

[To be reviewed.]

ROBBINS (L.) and Others. Cinq conférences sur la méthode dans les recherches économiques. Paris: Sirey, 1938. Pp. 106. 22 *fr.*

[This volume contains five papers, read before the Institut de Recherches Économiques et Sociales at different times during the last five years. They are concerned with the methods of organization and prognostication employed by the various "conjuncture institutes" of other countries. Professor Robbins describes the methods of the London–Cambridge Economic Service, Dr. Wagemann those of the Berlin Institute, Professor Dupriez that of Louvain, Professor Verrijn Stuart that of Rotterdam and Dr. José Vandellós that of Barcelona.]

TRAUB (R.). Le Contrôle des changes. Paris: Librairie Générale de Droit et de Jurisprudence, 1939. 10″. Pp. 236.

[This study is concerned rather with legal and administrative problems than with those of economic equilibrium.]

German.

BRAUN (G. W.). Technik und Folgen der Devaluation. (Wirtschaftswissenschaft Wirtschaftspraxis, edited by D. F. Schmidt, Vol. 18.) Bühl-Baden: Konkordia, 1938. 9″. Pp. viii + 271. *Rm.* 9.

[This book tries to "summarise" the series of devaluations between 1931 and 1937. There are three main parts: (1) The technique of devaluations—with a revealing juxtaposition of the English, American, Belgian and French procedure in such points as private gold hoards, gold imports and exports, subsequent discount policy and monetary circulation. On this last point, it is found that no country has made use of the opportunity offered by devaluation to expand the note issue. (2) The consequences to prices, wages, employment, money and capital markets, foreign trade and international capital movements. The results all point to the universal experience that the "inflationary" effects of devaluation are wholly imaginary and that the after-effects depend entirely on the economic policy pursued in combination with devaluation. But the devaluations *as such* were not a cause of economic revival. (3) The repercussions on Germany. In this part the author advocates (with an implied criticism of "pseudo-stabilisation") a devaluation of the mark by 50 per cent. From this the author expects even a cheapening of production because of the disappearance of the "expense-increasing restriction measures" in the supply of essential raw materials. The ingredients of a successful policy of devaluation are finally defined as an "indeterminate" devaluation with an embargo on capital export, an Equalisation Account and Open Market Policy. The idea of the book is very fortunate and can hardly fail to produce interesting results, but the author is barred by a lack of concrete and "institutional" knowledge—certainly in the case of England—to make the best of it or to get beyond statistical-descriptive exposition.]

DOPSCH (A.). Wirtschaft und Kultur. Leipzig: Rohrer, 1939. 9½″. Pp. viii + 696.

[To be reviewed.]

HUNKE (H.) and WISKEMANN (E.) (Ed.). Gegenwartsfragen der Wirtschaftswissenschaft. Berlin: Junker und Dunnhaupt, 1939. 10″. Pp. viii + 462.

[This book is a *Festschrift*, written for Professor von Gott-Ottlilienfeld (of Hamburg), the founder of the "Gebildetheorie," on the occasion of his seventieth birthday. The Professor is one of those social scientists of the "school-founder"

type—hardly to be met outside Germany—who gather around themselves a small circle of enthusiastic disciples and develop a language and method of arguing of their own which is entirely incomprehensible to the uninitiated. Thus while to the esoteric circle "his master's voice" is full of meaning and communicative of the ultimate truth, to the outsider it seems to be mere verbiage, designed to cover up a meaninglessness of content and an inability to achieve results in real social research. Among the thirteen contributions to this book the majority are written by the "esoteric circle," and have more of a mystical-religious than of a scientific character and convey no meaning at all to the economist or social scientist outside the school. For all he knows it might all be a deliberate hoax. There are three contributions on more concrete problems which their title would mark out as containing matter of interest for the economist. On rationalisation; income, savings, capital; "efficiency ways" (piece rates). But they are equally disappointing, made up of generalities, vague pseudo-philosophical observations, eulogisms of the political régime and of the Gott-Ottlilienfeld school—not one concrete or original addition to economic thought.]

IZURIETA-MERCHÁN (S. E.). Die wirtschaftliche Entwicklung Ecuadors von 1900 bis zur Gegenwart. Hamburg, 1939. 9″. Pp. 114.

[The author is a staff member of the Ecuadorian Consulate General in Hamburg. Apart from being a very thorough compilation of Ecuador's productive resources, industries, foreign trade, banking and currency institutions and public finance—up to now this information could only be had from scattered and obsolete articles in Spanish—his book contains also matters of more general interest, because in many respects Ecuador's problems are typical for those of undeveloped countries, *e.g.* the efforts made to diversify industries and get away from "mono-culture" (cocoa in the case of Ecuador). There are illustrative maps, a statistical appendix and a bibliography.]

RÜHL (A.). Einführung in die allgemeine Wirtschaftsgeographie. Leiden: Sijthoff, 1938. 9½″. Pp. 93. *F.* 2·90.

[This is a posthumous work by the late Professor Rühl, the former holder of the chair of Economic Geography in Berlin, who died suddenly in August, 1935. The present book represents a methodology of his science. The author was a stout adherent of the view that economic geography is not a natural–geological science but a social–statistical one, and this view is fully maintained in his last book. Geographic "determinism" by natural factors is vigorously rejected, and the influence of changing social and psychological influences is stressed. The book is full of fine and stimulating remarks for the social scientist interested either in economic geography (location, international trade) or in the collaboration between different branches of social science. A list of the author's publications—compiled by one of his disciples—is appended.]

SAHSAMANOGLOU (P.). Der Tabak in der grieschischen Landwirtschaft. Hamburg, 1939. 9″. Pp. 147.

[The author is a member of a Greek tobacco merchanting family expelled from Smyrna (Turkey). His dissertation on tobacco in Greek agriculture is more general than the title suggests, for the first fifty pages give a general picture of Greek agriculture which is quite a full-fledged survey of its own. The part dealing with tobacco is, after this, very disappointing and largely confined to technical problems and an uncritical repetition of the statistics of production, value, and exports. The profitability of Greek tobacco culture is entirely based on the family employment provided and the absence of the need for paid labour and machinery. But the real economic problems, either these or others of a similar nature, are in no way properly analysed.]

SURÁNYI-UNGER (T.). Nationale und internationale Preispolitik. Jena: Gustav Fischer, 1938. 9½″. Pp. 20.

[The reprint of a paper which the author—a high Hungarian Civil Servant and Professor at Szeged University—delivered to the Kiel Institute of World Economics. The paper contains some concrete details on the comprehensive price-fixing powers of the Hungarian Government for all Government contracts, but it is mainly classificatory. The author stresses the existence of price control even in "still quasi-capitalistic" countries like France, Switzerland, and Czecho-Sovakia. He comes down in favour of "direct" as opposed to "in-

direct" price control (*via* foreign exchanges, quota, etc.) because there is no control of the repercussions in the case of indirect measures. There is a final section on international effects of price control which contains some interesting details of the problems of price adjustment in the formerly Czech territory occupied by Hungary. Finally, the author advocates international contact between the various national price-fixing authorities as the nucleus of a new "planned" foreign trade system.]

TORNES (H.). Die Preisveränderungen bei den industriellen Rohstoffen im Konjunkturverlauf. Hamburg, 1939. 9″. Pp. 94.

[The behaviour of a price index for 45 industrial raw materials during the trade cycles since 1871 is analysed, with special chapters on the behaviour of sectional indices (coal, non-ferrous metals, iron, building materials, textile materials). The investigation relates to German prices and trade cycles, although occasional comparisons with English and American prices are made. A second part, designed to "explain" the differences in trade-cycle behaviour, is not very satisfactory. It serves to give an idea of the endless variety of the price-determining factors and their different combinations, but the impression is more of isolated remarks than of a coherent explanation. The final part, dealing with the consequences of prices fluctuations of industrial raw materials, is theoretical, not statistical. Price variations as symptoms and as "exogenous" causes of trade-cycle movements are distinguished, though it is maintained in a controversy with Woytinsky that a rise in prices need not be a boom factor, but might in certain conditions produce a slump. The final chapter on the movements of commodity stocks in the trade cycle does not try to do more than confront the opposing theoretical views. The most valuable contribution is the statistical work done in the first part which other investigators may find useful for further use and purposes of comparison. It is regrettable that the author worked in complete ignorance of the important American investigations on price behaviour.]

WIDERA (H.). Sicherung der Rentabilität der deutschen Filmwirtschaft. Hamburg, 1939. 9″. Pp. 52.

[In spite of a rapid increase in the popularity of films in Germany the crisis and losses in the German film industry continue. Starting from the assumption that it is impracticable either to restrict the scope of the industry or to lower its costs of production, the author suggests other ways of putting the industry on a sounder basis—mainly by depriving the cinema owners of their present safe and privileged position and by eliminating unnecessary middlemen in film distribution.]

Dutch.

KLEEREKOPER (S.). Over het gebruik van de wiskunde in de economie. Groningen-Batavia: Noordhoff, 1938. 9½″. Pp. 201. *F.* 3.90.

[To be reviewed.]

TEMPEL (J. van den). De Wereld in Stormtij. Haarlem: Willink and Zoon, 1938. 9½″. Pp. 390. *F.* 5.75.

[This is a book about the trade cycle, the first half of which presents Dutch readers with a review of the present state of the theory of the subject, mainly as found in English and American literature. In particular the author has been much influenced by J. M. Clark, of whose ideas he makes good use. His treatment of the monetary approach is, however, much less happy, being greatly confused by a belief that credit expansion is incapable of increasing purchasing power, a curious doctrine which (perhaps fortunately) he does not pursue to its logical conclusion. The second half of the book is devoted to a comprehensive account of the development of the world economy from the Great War to the end of 1937.]

Italian.

BATTAGLIA (F.) and BERTOLINO (A.). Problemi Metodologici nella storia delle dottrine politiche ed economiche. Rome: Foro italiano, 1939. 10″. Pp. 206. 25 *l.*

EINAUDI (L.). Il Sistema tributario italiano. Turin: Einaudi, 1939. 10″. Pp. xv + 349. 25 *l.*

[Professor Einaudi's descriptive work on taxation in Italy was first published in 1932. The fourth edition, revised and considerably enlarged, includes changes in legislation up to the end of 1938. The chief headings are: (1) The Budget, (2) State Taxes, (3) Local Taxes, (4) Corporative Taxes, (5) Enforcement of Taxation.]

GRAZIADEI (A.). Il Risparmio e l'interesse nella grande industria bancaria. Milan: Fratelli Bocca, 1939. 9½″. Pp. xi + 314. 25 *l.*

MANARESI (A.). Problemi corporativi. Bologna: Cappelli. Pp. 290. 15 *l.*

PALOMBA (G.). Lineamenti teorici di politica bancaria classica e contemporanea. Naples: Jovene, 1939. 9½″. Pp. 133. 20 *l.*

PANTALEONI (M.). Studi di finanza e di statistica. Bologna: Zanichelli. Pp. viii + 362. 25 *l.*

PAPI (G. L.). Economia politica corporativa. Vol. III, Teoria delle fluttuazioni economiche. Padua: Cedam. Pp. iv + 313. 10 *l.*

PIGOU (A. C.). Capitalismo e socialismo. Turin: Einaudi. 150 pp. 12 *l.*

DE POBZER (A.). La ricchezza privata della provincia di Padova. Padua: Cedam. Pp. 303. 50 *l.*

RESTA (M.). Il capitale fisso e le trasformazioni industriali. Padua: Cedam, 1938. 10″. Pp. 176. 16 *l.*

ROSSI-RAGAZZI (B.). L'apprezzamento medio esterno della lira nel triennio 1935–37. Rome: Courrier, 1938. 9½″. Pp. 63.

SCHORER (E.). Il principio di complementarità. Milan: Giuffrè, 1939. 9″. Pp. 110. 12 *l.*

VITO (F.) and Others. Gli aggruppamenti di imprese nell'economia corporativa. Milan: "Vita e Pensiero," 1939. 10″. Pp. viii + 220. 18 *l.*

[A series of articles by various authors on Industrial Combination. F. Vito, "The present state of the theory of industrial combination in Italy" and "Imperfect competition, collective monopoly and corporative economy." F. Feroldi, "The economic function of industrial combines" and "Industrial combines in the corporative system." E. Tonini, "Cartels in the national-socialist system." E. Vito, "Industrial organisation and corporative economics."]

VOLPE (G.). Ricerche di dinamica economica corporativa. Padua: Cedam, 1938. 10″. Pp. 144. 12 *l.*

Japanese.

Export Trade of Japan and its Control System. Tokyo Association for Liberty of Trading, 1938. 8½″. Pp. 44.

[This short pamphlet, produced by an association created in 1927 to foster freedom of trade, contains some useful and interesting information, both with regard to the extent of manufacturers' associations and combination and with regard to forms of war-time control in Japan.]

Official.

BRITISH.

Report by the Food Council for the Year 1938. London: H.M. Stationery Office, 1939. 9½″. Pp. 32. 6*d*.

[This year's report is severely critical only in the case of two products each produced under the ægis of a marketing board—bacon and milk. Of bacon they write: "We have in previous reports protested against the allocation of pigs to curing factories by uniform quota. . . . The result is that a well-placed and well managed factory is forced to refuse business to keep its less efficient competitors alive. . . . It has been suggested to us that the quota system must continue as long as the subsidy exists, so as to give all factories an equal proportion of the subsidy. We cannot . . . accept this contention. . . . We trust that steps will be taken at the very start of rationalisation to ensure that the consequent benefits will reach not only the curer but also the consumer of bacon." Of milk they write: "We have always been in favour of the principle that the retail price of milk should be open to free competition, or, if it is to be fixed, it should be fixed by some independent body. . . . We must reiterate our objections to the present method. . . . We feel grave anxiety as to our position as Consumers' Committees under the Milk Marketing Schemes. These Committees are described in the White Paper on Milk Policy which was issued by the Government in July, 1937, as a 'public safeguard provided under statute,' but we feel that such a description must only be misleading, unless the new Milk Industry Bill secures much more independent control and much more serious consideration for the views of Consumers' Committees than has been granted in the past."]

Report of the Chief Registrar of Friendly Societies for the Year 1937. Part 2. Friendly Societies. London: H.M. Stationery Office, 1939. 13″. Pp. 32. 2*s*.

Twenty-Eighth Report of the Development Commissioners being for the year ended the 31st March, 1938. London: H.M. Stationery Office, 1939. 9½″. Pp. 184. 3*s*.

[Grants made during the year amounted to £736,066 of which £606,611 were for agriculture and rural industries and £128,305 for fishery and harbours.]

Statistical Year Book of Southern Rhodesia, 1938. Salisbury: Government Stationery Office, 1938. Pp. xiv + 166. 4*s*.

[The last issue of the Official Year Book of the Colony was published in 1932, and anyone concerned with its economic problems has for many years been handicapped by the lack of easy access to up-to-date statistical information. It is much to be hoped that publication may again be more regular and frequent. The explanatory information and details of legislation and policy which were embodied in the old Year Book are not included in this. Their absence somewhat diminishes its value, but unquestionably the renewed publication of the statistical material is very welcome.]

General Wage Census, Part II. Seasonal Factories. Report on an Enquiry into Wages, Hours of Work and Conditions of Employment in Seasonal Factories of the Bombay Province 1936. Bombay: Government Central Press, 1939. 9½″. Pp. 88. 6*d*.

[The industries covered are cotton ginning and pressing, "gur" manufacture from sugar cane, and rice mills.]

AMERICAN.

United States Tariff Commission. Iron and Steel. Report No. 128, second series. Washington: U.S. Government Printing Office, 1938. 9″. Pp. xi + 527. 60 cents.

[This large collaborative survey of the iron and steel industries, not only of the United States, but also of all the major producing countries as suppliers of United States Imports, deserves the attention of all who want recent information

with regard to the various producers of iron and steel. Inevitably the studies of individual countries are highly compressed, and in the main the figures are left to speak for themselves, but there is brief discussion of the history and organisation of the industry, of tariff policy and cartel agreements, of raw material supplies, and of types of product and of markets served. In a work that is necessarily derivative it is to be expected that the information will not always be completely up-to-date. The study of the British industry, perhaps for this reason, makes little or no mention of the technical advances of the last two or three years. There are valuable independent studies of prices, international cartels and international trade restrictions.]

National Labor Relations Board. Division of Economic Research. Bulletin No. 2. The Effect of Labor Relations in the Bituminous Coal Industry upon Interstate Commerce. Washington: U.S. Government Printing Office, 1938. 9″. Pp. 76. 20 cents.

[After a short introduction which indicates the national importance of the bituminous coal industry and the extent of its movement in inter-state commerce (some 75 per cent. of all coal mined moves outside the confines of its state of origin), the report proceeds to discuss the effects of strikes upon the location of the industry and upon inter-state commerce. Disputes have been concerned chiefly with the right to organise unions and the history is inevitably concerned with the effects of strikes on unionisation, on the relative growth of union and non-union areas, and finally with the transition in 1933–8 from a non-union period to organised collective bargaining. It would appear that many mine-owners are finding that stabilised wages and greater certainty of their own competitive position have certain advantages.]

CHINESE.

The Trade of China, 1938. Shanghai: Statistical Department of the Inspectorate General of Customs, 1939. 11″. Pp. vii + 133. $2.00.

[This includes a detailed and valuable introductory survey, written by Mr. J. M. H. Osborne, Statistical Secretary of the Inspectorate General of Customs.]

LEAGUE OF NATIONS.

League of Nations. Money and Banking 1938–39. Vols. I and II. Geneva: Allen and Unwin, 1939. 10½″. Pp. 173 and 202. 5*s*. and 6*s*.

[To be reviewed.]

Guiding Principles for Studies on the Nutrition of Populations. Geneva: League of Nations (Allen & Unwin), 1939. 9½″. Pp. 281. 6*s*.

[The first part of this handbook, by Prof. Bigwood of Brussels University, deals with the technique of dietary surveys, the second part with enquiries into the state of nutrition of populations (special attention being given to physiological methods). It is highly technical, both statistically and scientifically, and apparently very well documented. It would have been more likely to attract attention had more emphasis been laid on the various possible purposes of different types of investigation.]

INTERNATIONAL LABOUR OFFICE.

The Minimum Wage. An International Survey. Geneva: International Labour Office (P. S. King), 1939. 9½″. Pp. 257. 5*s*.

[This report covers Australia, Belgium, Czechoslovakia, France, Great Britain, Ireland, New Zealand, Peru and the U.S.A., and is the first volume of a wide survey of minimum wage regulation. Though it is largely descriptive, the special problems and actual results of wage fixing are briefly considered. Collective agreements are omitted except in the rare cases when they have been made statutorily binding. The bibliographies are very full.]